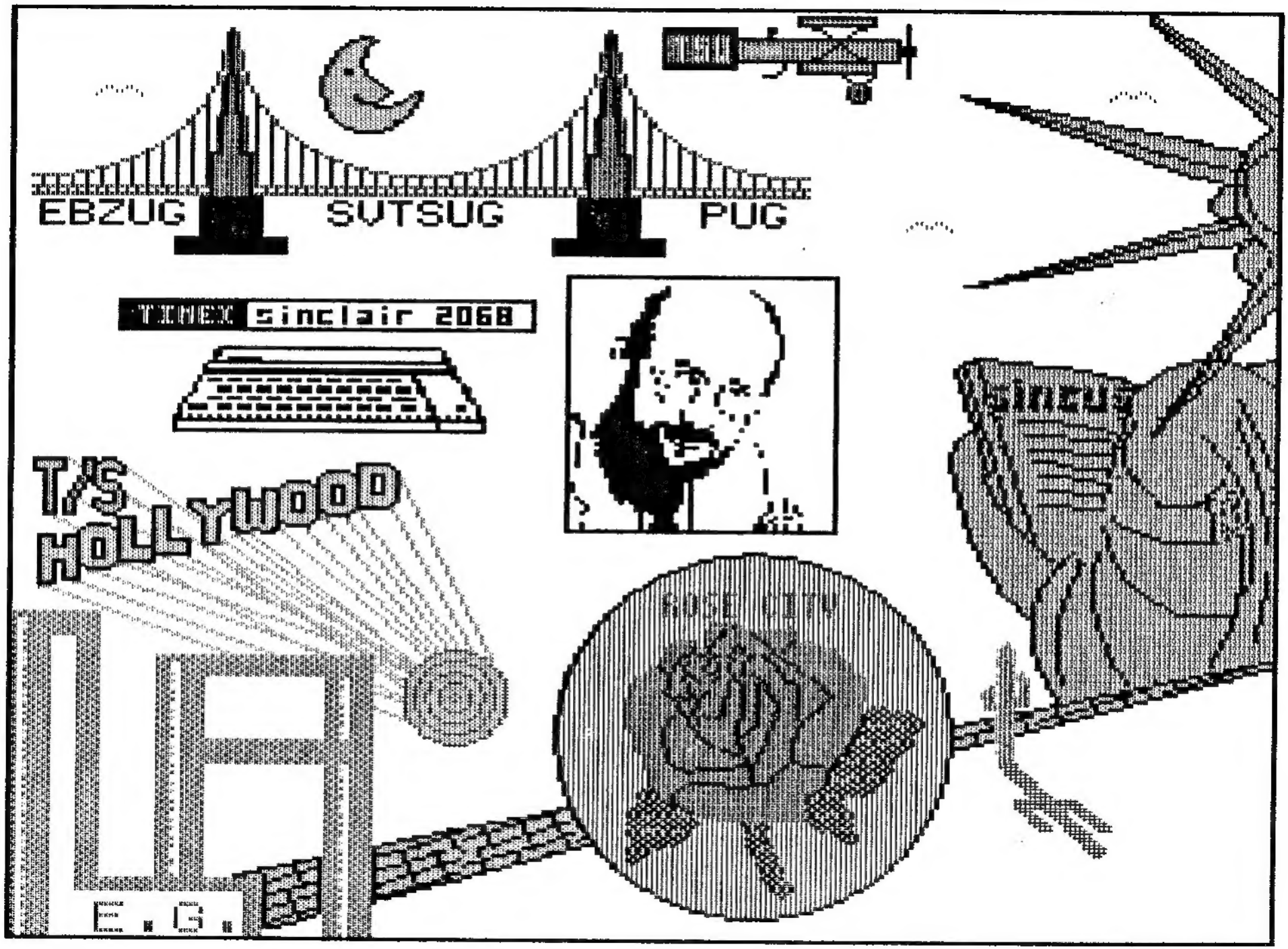
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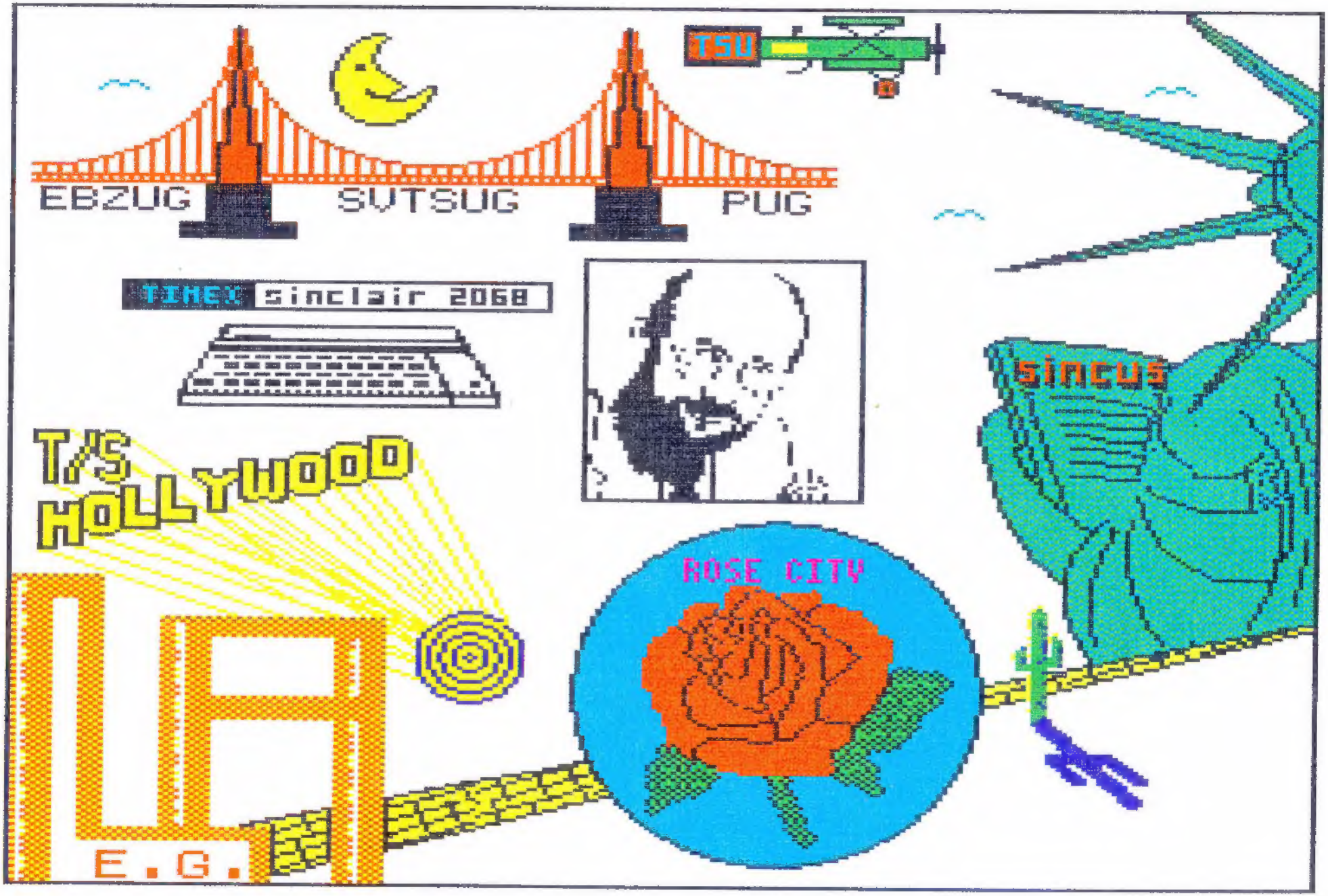
SVTSUG
PUG
sinclair 2068
T'S
HOLLYWOOD
E.G.


EBZUG
SVTSUG
PUG
TSU
TIMEX sinclair 2068
sincus
T/S HOLLYWOOD
ROSE CITY
E.G.

ABOUT THE COVER

The image on the cover is an RLE, but NO ORDINARY RLE! This one has traveled THOUSANDS of miles, let me explain... I began the RLE in Phoenix as a very simple image, with LOTS of white space. Then, Ed Grey called Phoenix via PC Pursuit and downloaded the RLE from me. He then added his part and sent it on to Gary Lessenberry in Chicago. Gary added his part and sent it on to Chris Raynak in Cleveland. Chris added his plane and sent it on to BUBBS BBS in New York. John Colonna Downloaded it from BUBBS, and he and Paul Hill of the SINCUS group added their parts. John then sent the RLE to Michael Carver in Portland OR who added a rose. Then, Carl Forst picked it up from Michael via PC Pursuit again, and brought it down to L.A. where he added a Motion Picture Industry image to it. Lastly the image of our dear old Uncle was placed in the top center. Finally Carl sent it on to Norm Lehfeldt in San Francisco who loaded it into his QL, added color and then printed it out on his color printer. All in all, the image travelled some 8,000 miles (assuming no satellite links were used). No cassettes or disks were mailed, all transmissions were electronic ones involving modems and xmodem protocol. The whole process took less than 3 weeks, and most of that time was simply human procrastination (on my part also). But it stands as a testimony to the electronic times we live in. (NOTE: only 50 copies of the Color cover were made, the rest were B/W)
Both the B/W and color versions of the cover RLE were printed using the QL screen dump routine written by Don Thompson (who also wrote the M.Code version of the RLE doecoder for the QL: "RLE.BIN".)The screen dump software available from Curry Computer

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THE GUIDE TO T/S TELECOMMUNICATIONS

by T/S USERS

Dedicated to the Sysops & Cosysops who work so hard to make this a better world for all T/S'ers.

Edited by
Pete Fischer &
Steve Ishii

"...help spread the word to the uninformed: data telecommunications is here to revolutionize the way people interact with other people on a daily basis...We..look anxiously toward the day when worldwide data transmissions become affordable [for all]..."

Ken Coller, Telecommunications User Group

TABLE OF CONTENTS

1 Introduction

Friends, we tried to cover quite a bit of ground here, so please be patient if it's not totally complete. We saw a need for this guide and attempted to fill it. Both the editors spent hours and hours calling all over the U.S. in the last year. We endeavored to bring some of this experience together into our humble guide. We are users, not Sysops. We felt this objectivity was important. You judge for yourself if it was worth it.

There were a number of significant developments which convinced us that T/S Tele-communications as an activity seemed ready for expansion. First, was the development of Xmodem protocol last year by Kurt Casby (and later by Zebra Systems and Grey & Clifford Computer). Second, there was the availability of VERY reasonably priced 2050 modems. These can STILL be found from some vendors. Third, came the announcement of Tinyboard BBS software by Randy and Lucy Gordon (of which many improvements have since been made). Fourth, Mr. Casby once again has recently introduced Casboard BBS software for the TS 2068.

More recently came the development of 1200 baud modem capability from Grey & Clifford Computer Products using Specterm 64 and the Z-SI/O card. This really makes long distance calling a whole lot more feasible economically. Further, it makes downloading/uploading much less tedious. It's difficult to describe unless you see it in action.

The last major development is the expansion of P.C. Pursuit. This allows unlimited modem to modem calls (after hours) for a flat $25/month. Previously, this service was only available to and from 12 major cities. Now you can call FROM over 17,000 exchanges and the number of cities has increased in number (check Appendix C for the PC-Pursuit information number for the latest cities added).

In this manual, we list those remote systems that have either directly supported T/S computers consistently over the past year, or are important electronic sources (such as MCI mail). In addition to providing good information about T/S computers, many boards also support file transfers. This feature allows you to upload and download programs and text files.

We also cover about 20 odd pieces of software and 6 pieces of hardware (not exhaustively, mind you). As I said, we tried to cover quite a bit of territory, and as a consequence, some of it has limited depth. But, we also tried to give reference for further information. If you take issue with anything said in this guide, please do so in the most widely available forum you can manage to access. Accuracy is far more important than our egos by a long shot.

Pete Fischer & Steve Ishii
March 1987

ACKNOWLEDGEMENTS

So many people helped produce this guide, it's hard to list them all. Jack Dohaney gave us the idea. Those who contributed were: Dave Schoenwetter, Tony Gomez, Mark Fendrick, Norm Lehfeldt, John Colonna, Rob Curry, Rich Moldovan, John Kuhn, Craig Shaw, Ken Collier, Tom Lyon, Kurt Casby, Thomas Simon, Sir Clive Sinclair (well, in spirit anyway), Rebecca Wieser, Julie Barrett, John Brown, David Hoshor, Barry Carter, Tim Woods, Paul Holmgren, Alex Burr, Charles Stelding, Carl Forst, Michael Carver, Paul Hill, Jim Showalter, Bruce Taylor, with VERY HEAVY technical support from Dave Clifford, Ed Grey and Gary Lessenberry (and I mean HEAVY). And of course all the sysops and co-sysops. Thank you friends, I hope the net result was worthy of your efforts. It was really gratifying to see all the cooperation we received from all over the country.

2

The Big Picture

C'mon it's EASY!

I honestly don't know why there seems to be such a mystery surrounding the use of tele-communications. It's hard to find words to describe the wealth of information, experience and free software out there waiting to be tapped. For example, have you ever spent hours or days trying to solve a problem, only to discover 6 months later that someone else has solved it a year ago? If only you'd known!

The electronic forum can act as a "Round Table" for the ZX/TS/QL community. As owners of limited edition computers, we're very dependent on each other for mutual support. If you take the time to read and understand the information in this document, you should be able to sign on to a remote database system, read and write messages, perhaps make some file transfers, and do whatever else the system offers. You will be safe in knowning you are doing all of this without making any serious mistakes, such as accidentally accessing the N.O.R.A.D. computer and launching a flock of ICBM's towared Russia (incidentally, recent motion pictures notwithstanding, there is no way you or anyone else could break into the defense department's missle launching system by mistake. They aren't even tied to standard phone lines).

I've encountered three major reasons from people as to why they don't make more use of their modems:

1) "It's just a bunch of kids!" While it's true that there are a large percentage of young people with modems out there, a good number are not. These "older" people carry on very mature conversation and share invaluable information on a daily basis. If you randomly choose two or three boards to call, the odds are good you may find young people pursuing their own form of entertainment. But, nearly every board described in this guide is not in that category. In ANY city of the U.S., you can find intelligent exchange if you are willing to look for it. Furthermore, these "kids" may turn out to know three times more about the machinecode than yourself!

2) "It's too difficult, I always mess up!" If you take a modem and terminal software out of the box and hook it up, it may not be totally obvious how it all works. Even those of us who've been using modems for years can always learn something new. That's part of the fun of it. Nowadays, there are some good guides and manuals to go with the software and hardware available. It is partly to address this confusion that this guide was written. It really is easy, friends, but if you miss ONE KEYSTROKE; just like with most software, its's not gonna work. For those working with MTERM II, we strongly recommend Barry Carter's manual, available from most T/S retailers or from Barry (See Appendix D). But by far, the surest way is to get someone who is experienced to take you through it step by step. Then, if you have questions, you can ask them. This "hands-on" approach works wonders. It would make an excellent demo for a User Group Meeting (I know we've tried it).

3) "It's too expensive!" It's true that long distance calling is not cheap. However, there are a number of ways to DRAMATICALLY reduce the cost. The first step is to get a Third Party Long Distance Service such as SPRINT or MCI. This will save you money right off the bat and costs nothing to begin the service. The next big break we've gotten recently has been the continuing expansion of P.C. Pursuit. What is PC PURSUIT? Ed Grey of G & C Computer Products has used this service extensively and provides the following description...

"PC Pursuit is a service provided by GTE Telenet (a US SPRINT company) that allows economical long distance DATA ONLY telecommunications. Unlimited off peak hours use of this service costs only $25.00 monthly. From practically anywhere in the U.S. you can call to 14+ major cities and connect with any other computers set up to handle remote access. This includes direct links with other computer users, acessing data bases or any other public access BBS. The service works well except for delays in connecting with host cities (occasionally). This is caused by too many users overloading the PC PURSUIT system. They are aware of (and expanding) the network to accomodate the additional users. Considering the priceof traditional long distance services, I think that PC Pursuit is a bargain. You can get additional information on PC Pursuit by calling their 800 numbers (see Appendix D) both modem and voice. Both calls are free, and at that price, why not check it out."

The next big break for us Long Distance Telecommunicators has been the availability of 1200 B.P.S. software and hardware. These are covered extensively in this manual, but suffice it to say that an XMODEM download at 1200 BPS takes 1/8th the time of a HEX download at 300 baud.

BBS ETIQUETTE

As with everything else that is good in this world, there are responsibilities that go along with telecommunications. Always remember that you are using someone else's computer system; you are a GUEST! Each system has it's own unique set of rules, so your first priority is to find out what those rules are and then obey them. Every person that has ever put a computer online has spent a lot of money to do so. While they don't expect nonstop pats on the back, it seems reasonable that they should at least be able to expect fair treatment from users. Every Sysop has their own idea of how they want their system to be run. Some are still in the process of evolution and are VERY interested in constructive suggestions. However, what may seem like a simple criticism to you may be very irritating to the Sysop. You only knew about the one statement. What you don't realize is that the Sysop has been finding nothing but complaints in the mailbox all week!

IT'S VERY EASY TO SIT BACK AND CRITICIZE, IT'S VERY DIFFICULT TO STAND UP AND DO SOMETHING PERFECTLY!!!

The fact remains that the Sysop has a large investment in making this computer available. Appreciate this and act accordingly. If you have questions about what is allowed and what isn't, most Sysops will send you information if you mail them a self-addressed-stamped envelope (see Appendix D).

Some Sysops like to chat, some don't. If you're calling locally or with PC Pursuit, it's important to respect the hour. Perhaps, you do your best BBS'ing at 2 a.m., but asking for a chat then is inconsiderate. If you're calling Long Distance, realize that the average person talks at 150-200 words per minute, but types maybe 20-30 with time out to compose thoughts. If you need one short question answered, and then plan to return to the BBS, then a chat is fine. But for conversation of any length, it's not cost-effective. Ask the Sysop if they have a handset connected and explain your plan. Once the O.K. is given, then pick up your receiver and (on the 2050 modem at least) remove the power supply plug to your modem. This will leave your computer completely intact, but stop the carrier tone.

Nearly all T/S boards require real names at Logon. Pseudonyms or "Handles" are generally disallowed. Also, when signing on, why not sign on just as you would introducte yourself in your own society. Please take the time to logon properly. Since we are a national group, we'd all like to know where you're calling from. Cryptic abbreviations like Ntwn, or Cdale defeat this.

Learn the command set used by the system. This guide contains the main menus of all the major boards at the time it was written, but they may have changed dramatically since. The first time you logon, call the HELP files and print them out if possible. This will save you much hassle, grief and money in the long run. Once you've mastered these commands, you can toggle the EXPERT MODE and then no menus will appear. Don't do this prematurely, however. There are a few things more irritating to a Sysop than a brand new user, usually a novice, who immediately switches to EXPERT and then stubles around, totally lost. Next they'll page the Sysop, or leave messages saying, "I can't get this thing to work!" Most likely, the information you lack can be found in the SYSTEM FILE AREA. But if you've read the system files, and still don't understand something, then by all means ask. Maybe you've discovered something that other users had been wondering about also.

When you're offered a place to leave comments when exiting the system, don't try to use this as a place to ask such questions. It is rude to the other callers to expect the Sysop to carry on a half-visible conversation. If you have a question or statement to make and expect a response, put it in the section where all the other messages are kept. This allows the Sysop to help many people with the same question with the least amount of effort.

Try to avoid simply "Pulling the plug", log off properly. Some systems don't realize you're gone, and sit waiting for input, uselessly. Also, you logon info may not be saved and you will have to reread messages you already saw. Occasionally disconnections do occur, but try to minimize them if possible.

There is a very significant percentage of BBS callers who are referred to as, "Silent Users." These callers logon, capture all the messages, and log off without leaving a trace of their presence. No one knows why this is. Partly, it may be due to phonebilliphobia, or fear of large phonebills. However, it is possible to leave messages without spending a great deal of time. See the section on "WRITING MESSAGES" for tips on this. But you will not only contribute to the value of the BBS, but to the T/S community at large and indeed, may make you some new and important friends. Stop for a moment, before you logon and think about what you may have done new with your system since you last logged on. Did you get some new software? Some new hardware? Read an interesting article in a T/S magazine? Just because you subscribe to a magazine, don't expect everyone else does also. Any new piece of information may be the seed which starts a long, involved conversation that you never dreamed at the time you left the original post. Most of all, ENJOY THE SYSTEM!! That's what it's for!

The Boards

This section my friends, was VERY difficult to write. On the one hand, you may have a Sysop who is just starting out and has a small message base but is putting in hours and hours to improve the board. Then, on the other hand, you have the not-so-quite-a-millionaire Sinclair user who is interested in telecommunications, but can't AFFORD to call a small board to help it grow bigger. What can I advise? If you can't afford to call a small board, then don't. However, there are a number of top notch boards; people with $3-4000 invested, try one of these. Perhaps, you might consider starting one in your city (especially if you're in a PC-Pursuit Target city, you will definitely get support from out of town). If you're not in a target city, understand that some of the sysops are planning a scheme to trade messages. Thus, adding to the total number of messages on any one board.

If you're interested in getting a board going (without requiring 1 cent in investment), see the section "How to start your own T/S board." The main information on the boards are listed in the back. Please feel free to xerox this table and pass it on to every T/S user you know.

Bill's Obsession BBS

PC PURSUIT – Yes

What started as a temporary board almost a year ago has blossomed into an impressive full time BBS. Over 300KB of T/S dowloads and 2 MB of CP/M files. The board has a section dedicated Timex message base (includes, all T/S computers and AERCO disk users as well). It's very easy to move around, it accepts "Stacked" commands. Bill Erickson (the owner and sysop) is also very helpful and works hard to improve his board all the time. The fact that he's accomplished so much in just under a year, tells you this! Bret Lanius is also performing Co-sysop duties on both the above sub-boards. It was Bill's grandson, Paul, who found a fix for the Modem 7S0 implementation on the Aerco RP/M disk program. Working copies of this program are available on this board (send them $2 and they'll send you a disk). Bill's attitude is that he doesn't want just any files stored, but only those that are worth the time and trouble to download. As a result, only the cream of the crop appears. Downloads for the TS2068 in Casby Xmodem, Specterm 64 Xmodem, HEX and ASCII, and also, CP/M files in Xmodem protocol are available ONLY by requesting the desired files in a message to the Sysop. The files available are contained in the file labeled "TIMEX.LST" which can be found in the D/L section.

COMPUSERVE

COMPUSERVE, in case you're not aware, is huge, unimaginably huge. If they froze the present contents and you spent the rest of your life exploring it, you'd never see a small fraction of the whole. For the purpose of this guide, however, we're confining our description to the T/S and QL sections of this service.

This is by far one of the best message bases for T/S and QL computerists available, and there are more downloads here than anywhere. There are typically anywhere from 10 to 25 new message posts daily. To reach this section, simply type GO CLUB at any function prompt. You will then be asked to choose a sub-topic area. Select # 4 for the general T/S area or # 6 for the QL area. You will find that people who visit the Timex SIG are very know-ledgeable about T/S related information. Almost any problem can be addressed by posting a message here, it's also a good place to get the latest news and information, and several vendors have Compuserve ID's as well.

Another big feature is the Wednesday night chats (online conferencing) where you can logon and chat real time with people from all over the country, generally very interesting, we are told. Neither of the editors currently owns a QL, so we depend on others who do. They say the QL section is reasonably active and most questions asked are usually answered in a day. Recently Xmodem was developed for the QL and was put up for download. Compuserve at one time was the only source of QL downloads, but this has since changed (see Timexchange & TSU BBS').

The download section is very impressive, with files for the TS1000 (uploaded with Z-COM), files for the TS2068 (in ASCII, MD-68/Byte Back, Mterm HEX, and Casby Xmodem protocols). About 100 TS2068 files in all. QL files are nearly all ASCII format, however the new Xmodem should change this. (Note: when Compuserve says 1200 baud, they're really running around 800. If you're familiar with 1200 baud operation, you'll be able to tell the difference.

FWKUG

PC PURSUIT – YES

The FWKUG is a relatively new board, hosted by the Fort Worth Newsletter editor David Baulch. David is a very prolific writer, putting an online newsletter on STARTEXT on a weekly basis as well as a 24 page newsletter for the FWTUG. This board has, as yet, no T/S specific message base, although messages can be left in the general base. Rather, the main focus here is on files for download. David has put up over 200K the last time we checked, Xmodem and HEX format files are available. Since this is a PC Pursuit city, it has a good chance for growth. There are also extensive CP/M files for download from a 44MB hard drive, and technical assistance in CP/M is gladly given.

I.S.T.U.G

This is one of the pioneer boards in T/S telecommunications. Willie Jones and Paul Holmgren began with the Tinyboard software but have since written their own unique BBS program. They now say it's 99.9% crashproof and the most amazing thing is they've made all these improvements without ANY extra hardware – just a TS 2068, TS 2050 and TS 2040. Since this is the board for the Indianapolis User Group, it always has the latest update information on the T/S Midwest Computerfest. Oh , for those interested in setting up your own TS 2068 operated BBS, you can contact the above people to purchase the modified Tinyboard software they currently are using which can be setup on any "unexpanded TS2068!" Some of the nice features provided for include: a real–time clock, the ability to print (if a printer is attached) the name of the logon, the time of logon, and all subsequent actions the caller performs (eg. reading messages, leaving messages etc.).

LOONEY BIN

The original Looney Bin was one of the most revolutionary experiments in T/S BBS technology. Richard Kelsch wanted a BBS for his TS 2068, so he wrote one! The software was all machine code. Although he possessed A&J Microdrives, he felt they were too slow. He really wanted a disk drive system, but the cost was too prohibitive. So, he simply built a 512K RAM board for his TS 2068 and that was that. "The price of the RAM chips was much cheaper than a disk drive." Next, he wrote a RAM disk machine code based program so he could utilize the 512K RAM for his BBS. The whole thing was online for many months and for those who had a chance to call were treated to a very slick BBS system. However, as all good things someday come to an end, sadly we report Richard's TS 2068 went down for repairs. In its place, the Looney Bin now operates off an Atari 512 ST. Yes, there is a separate Timex message base. Right now, there is 1 Megabyte of storage (700K as a RAM disk, 850K is a physical disk).

MCI MAIL

This is not a BBS at all, but an EXCELLENT way to send mail. I would love to see this as the unofficial post office for our T/S–QL community. It costs only 45 cents to send a 500 character message to any of over 50 countries! Using this system, we could communicate with fellow Spectrum and QL owners all over the world! For a complete explanation of the charges refer to APPENDIX F. MCI Mail also allows you to send hardcopy mail to the same 50 countries and use the TELEX system as well. The electronic mail can only be sent to another boxholder on MCI Mail. The box itself costs $18/year. Many T/S folks already use this system (Curry Computers, RMG Enterprises, Jack Roberts, Mark Fendrick, ZX Computing Magazine, Ed Grey, Les Brown and probably more).

NIGHT OWL SPECIAL BBS

PC PURSUIT – YES

The Night Owl Special provides a sub–board for the Chicago Area Timex User Group. It also supports a transfer file section which is, so far, relatively small, but there is good growth potential since it is in a PC Pursuit city. Activity on the message base is light to moderate, but Co–Sysop Gary Lessenberry is working on a scheme to trade new posts with other Timex boards around the country. This should improve the picture. The message base has an unusual READ function. It not only gives you the newest messages put up since your last logon, but also the original posts to which the new messages are responding. It prompts at the end of every sequence for your reply. This board is completely reliable in terms of operating hours, (24 hrs/7 days). Gary has assembled an excellent T/S text file section which includes files on current T/S vendors and an up–to–date T/S nationwide BBS list. There is support for TS1000 uploads/downloads using Mini–Xmod and for the TS2068 using Casby Xmodem, Specterm 64 and Zterm 64.

OMNI NET BBS

Although located in New York, it is not currently available through PC Pursuit. Hosted by Al Hartman, long – time Sysop of the original Zebra Systems BBS, this board is a much simpler and straight forward board than the old Zebra BBS. There is a Timex Sub – board which can be accessed by entering the Special Interest Group menu item. No file transfers are currently supported. A frequent visitor is Mark Fendrick of Computer Shopper (T/S Survival Column), and ZX Computing Monthly (Across the Pond) fame. Some QL discussion appears here as a result. Mark also posts the "Sinclair Information Network" (S.I.N.) newsletter online here also. However, updates to the newsletter are very sporatic. There is also a product review & tips section available. Activity is light to moderate, however, with the closing of the ZEBRA systems BBS, we anticipate a higher activity on this board.

OWEGO FREE ACADEMY

These people deserve recognition. In the heart of IBM country, they maintain files on this board for Timex computers. There is NO T/S specific message base, only files for down – loading. Primarily, the files are related to telecommunications, but other types are available as well. The D. Schoenwetter Mterm/AERCO patch first appeared here. Dave is a member of the SINCUS group, but now works on the TS 1000 since his last 2068 died. The BBS supports both ASCII and Xmodem transfer (see section of Interpreting filenames). The T/S files are found in directory #9, and can be accessed by entering the stack command: F;9;11.

PLINK

Known more fully as American People Link (PLINK), this a national pay CHAT service. You can chat online with folks from all over the country. I know of at least one person who is hopelessly addicted to it. There is a Timex Specific message base on there. It has light to moderate activity, so if you're already a subscriber to this service, you might want to check it out. (Editor's note – As of this writing, a complimentary one hour token was being offered to new subscribers. Refer to the the Appendix for the (800) number for more information).

SERIAL PORT BBS

The Serial Port, advertised as Mount Clemens Fastest Growing BBS' supports a Timex sub – board. Co – Sysop, Les Brown operates this message base, and writes several accompanying text files "Notes from Les" and "Product Reviews." A frequent visitor is Mr. Barry Carter who wrote an accompanying book describing the Mterm II software features. Barry is very much into QL'ing these days, and if you want the latest info on this subject, this is the place to ask. Activity is generally moderate. The 7 – 10 PM time slot (E.S.T.) is reserved for "PAY" users only. The remaining hours are free. There is also a list of current T/S vendors and a relatively small file section which Les has recently begun to increase. The board is up 24 hrs/7 days. (Editor's Note – There was an indication that in the future 300 baud communication would NO longer be supported on this BBS; only 1200/2400 baud).

THE SOURCE

The Source currently offers no specific T/S message base to date. However, by the time you read this, things could change. Mark Fendrick does visit here on ocassion, and puts together a Timex newsletter. If you leave him a message to ID....BCA – 632, requesting the newsletter, he'll "mail" it to you the next time he publishes it. The Source is also very large like Compuserve. At 300 B.P.S. communication, it is more expensive than compuserve, but at the faster rates (ie. 1200/2400 baud), the rates are actually cheaper.

STARTEXT

STARTEXT is a pay system $10/month (refer to Appendix for details). Once the initial $10 fee is paid, there is unlimited access. It has 2 online newsletters and file transfer in HEX for the TS 2068. The newsletters come out on a WEEKLY basis! One is by the Dallas Timex – Amstrad U.G. and the other is for the Fort Worth S.T.U.G. These are the primary reason for getting on here, although you could send E – Mail to anyone else on line. There are no dedicated Timex sub – boards for general messages. The quality of the newsletters is amazingly high considering how often they come out. It is possible to get a one month trial password, simply by writing and asking, but you have no E – Mail capabilities on this basis. The system boasts a wide range of information including news and weather, etc.

THE TIMEXCHANGE

The Timexchange, advertised as the West Coasts' only dedicated T/S dedicated BBS, features 25MB of online storage capability. Current listings show about 800K + of T/S downloads and around 20 MB of CP/M files. The system is very easy to logon, and best of all, there is no time limit. Dave Clifford (of Z-Link and Z-SI/O fame) is the dedicated Sysop. Dave has worked very hard during the last year and a half to make this a truely first class board for Timex users. Callers range from all over the U.S. and even London. Besides the general message base, this board boasts an extrodinary range of downloadable software and text files. The file section supports downloads using Mini X-mod (for TS1000/1500 files which are available on request), and the TS 2068 using Casby Xmodem, Specterm 64 Xmodem (to understand the difference, see section "Downloads and Uploads"), also ASCII files for the TS 2068 and both ASCII and Xmodem for the CP/M soft ware. Since Dave is the originator of the Z-Link twister board and more recently the Z-SI/O card, this board provides the latest updates and online support of these products and the Specterm 64 software. Available 24 hrs/7 days and extremely reliable. This is truely an incredible resource for the Timex community and worth a visit.

THE TSU

PC PURSUIT -

Another amazing innovator is Chris Raynak, sysop of the TSU BBS. Chris has networked an Atari with a Commodore to make this board. Mostly dedicated to Timex users, there are sub-boards for the TS 1000/1500, TS 2068, QL, Oliger Disk System, and a board containing a list of files descriptions available for download. The file section supports the above computers. All file transfer is in either Xmodem or ASCII, no HEX. Now up 24 hrs, 7 days (weather permitting), both 300/1200 baud is supported. Thanks to the presence of the Oliger Sub-board, Mr. John Oliger himself calls in on occassion to check the activity and answer any questions regarding his products. Chris recently purchase a QL kit, so we anticipate more activity and innovated projects for this computer. Activity has picked up recently, and the potential is very good for continued success!

RMG ENTERPRISES BBS

PC PURSUIT - YES

A long time supporter and dealer of T/S products, Rod Gowen has set up a TS 2068 based BBS for the loyal Timex supporters of the great Northwest. What began as a trial run has seen enough participation and interest from callers all over the U.S. Because of this, Rod feels confident that the RMG BBS will continue to operate throughout the vear. ("As long as there are callers, there will be a RMG BBS!").

The BBS is one of the first to use the new Casboard 2068 software. In addition, the system con-figuration includes an AERCO FD-68 with a quad density drive. This will provide an online memory capacity of 1.5 MBytes (800K for messages, and another 800K for download files).

Several different message bases are currently available and include such topics as QL information, general interest, CCAT/S section, 1000/1500 ZXers, 2068 topics, FD-68 files and a weekly special section (the user can find some excellent prices on selected items which can only be taken advantage of by calling the BBS). Overall, Rod has been very impressed with the Casboard software. He encourages all who call to please check out all sections and not to limit themselves to just a couple of message bases. Currently, the BBS is operating on limited hours (10 pm - 12:00 PST).

TYLER TIMEX BBS

Another relatively new board dedicated to Timex Users is setup in Tyler, Texas by Charles Stelding. The Tyler Timex BBS is also operating off the new Casboard 2068 software program. The system con figuration includes a TS 2068 with a two-drive AERCO FD -68 disk setup. Several message bases are available and include: general interest, Timex messages, Timex News & Reviews, Download section, and Private message to the Sysop section.

In addition to supporting the Timex users of the Ft. Worth area, callers from out of-state also visit frequently. Currently, programs available for download are mostly for the 2068, and uploading has not been permitted. This will probably change in the near future as the capability to upload programs using the Casboard program are provided for. Current operating hours are restricted to 6 pm - 8 am weekdays and 24 hours weekends. (Editor's note: Although not totally related to telecommunications, the Sysop has written a very innovative Desktop Publishing type program for the TS 2068. For details and a sample printout, contact Mr. Stelding).

KING'S MARKET BBS

The listing of this particular BBS in the guide is a perfect example of the value of telecommunications. While both editors thought they were aware of all major BBS across the U.S. that supported T/S computers, lo and behold one slipped through the crack! The King's Market BBS was discovered from a message posting on another T/S BBS and upon calling, we found a relatively active Timex sub-board.
The Timex section is organized by Frank Holland and Roger Hunter. The message base is home to the Mile High Chapter Timex User Group based in Denver, Colorado. The board supports all T/S computers (from the Micro Ace to QL) from technical information to "emotional" support. In addition to the regular message base, the monthly user group newsletter is available for viewing or downloading. The information that I saw contained in the newsletter was very good and well worth capturing in your buffer for saving and later reviewing.
Uploading and download of files is available (in HEX, ASCII or CP/M Xmodem protocol). The number of files available currently is few in number. In addition to supporting T/S computers, King's Market offers a vast and diversified menu of special interest sections (Timex being one of them)! Other areas of interest include: a writer's section, book discussion, cufinary interests, and many other computer type sub-boards. The BBS operates 24 hours a day, and is setup for 300 or 1200 baud communication.

LOCAL TECH BBS

Another unknown BBS that caters to Timex computing was discovered as a result of the original T/S Telecommunications Guide. A reader of SyncWare News saw the article on the guide and requested a copy be sent to him. In his letter, mention was made of the LT BBS in Lancaster, California which had a T/S sub-board as well.
True to his word, there is indeed a Timex sub-board on the LT BBS. The author of the letter, Jim Smith serves as the Co-Sysop for this section. The board is visited frequently by the several local Timex supporters. They would encourage and welcome outside callers to share programs and information with them. Uploading and downloading is available (the board has a very large file area) and supports ASCII, HEX or Xmodem transfer protocols. Jim currently has plans to setup his own BBS supporting Timex computers in the near future.

J.J.'s FIDO BBS

Located in Las Cruces, New Mexico, this board serves as a central focus for The Timex Sinclair Amateur Radio Users Group. There is no Sinclair-specific message base, but messages are exchanged through the general interest area 1. They also support a Download section. Here may be found future articles for the group's newsletter:"QZX". They also actively support the use of the FIDONET, (See a description elsewhere). This group also does a lot with Packet Radio, which combines the Bulletin Board system with Ham Radio, allowing cheaper Long Distance communication. The Fido address is Net 15/ Node 6. The Co-Sysop is ALEX BURR. For more info, send a large S.A.S.E. to Alex at:2025 O'Donnell DR./ Las Cruces, N.M.88001

The TIME WARP

This started on an Unexpanded 2068 using Tinyboard software on a phone in the Dormroom of sysop Jim Rodlin. Jim has since rewritten the software many times and has ambitious plans for future versions (see his description). Jim is out of school, and the old number is no longer good. He plans to put it up again on a new number sometime in the near future. He also plans to get a disk drive to make it a real system. Down until further notice.

PDSE (Public Domain Software Exchange)

This is breand new board in the San Francisco Bay Area, which is also accessible via P.C.Pursuit. SigOp Pat Morrissey has done an EXCELLENT job of setting this up. There is a Sinclair-specific message base, as well as Uploads/ Downloads for the 1000, the 2068, Spectrum and QL. You won't be able to read the messages on your first call, but you CAN view the DL listing (list "L 44" off the file menu). The T/S SIG is message base #10. Anyone planning to Upload/ Download is STRONGLY encouraged to capture Bulletin #11 and study it first. It explains the system of file extensions-the most elaborate so far in the T/S world, with 30 possible combinations. ASCII and XMODEM available only. With luck, the Bay Area users will not make the mistake other cities have made, and will realize what a powerful tool has been set before them.

BUS DEPOT

This is also a fairly new board, run on a Fido. There IS a Sinclair-specific message base, as well as Uploads and Downloads for both the 2068 and the 1000. Message activity is light to moderate. The co-sysop, Tom Phillips, seems very enthusiastic and helpful. Since the board DOES support Fido NETMAIL, Tom is very happy to exchange messages through that system. The Bus Depot's Net /Node #'s are 112/4. The Board is a collective effort of the Central Florida User Group.

Belden Hill Users BBS (BUBBS)

Located in Upstate New York, this board has no Sinclair-specific message base, but it DOES have files for DL (see appendix). These are found in File Area #6. This board is used by the SINCUS User Group. Most files are for the 2068, although there are some RLE's and Text files of general interest to all Sinclair Users. Local contact person is John Colonna, you can leave mail for him on this or Owego Free Academy. (If you ever saw posts about a BBS called, "TUBBS", this is the same one, under new management)

THE TOXIC DUMP

This has a sub-board titled "TI/99-Timex". It gets very little traffic at the moment, but might be of use to locals. Not recommended for Long Distance, and NOT accessible via PC Pursuit. No Files.

THE PGHTSUG BBS

This is run by Joe Siciliano of the Pittsburg TS User Group. It's a Casboard, run on a 2068 with AERCO disk drives, does have downloads and has medium traffic levels.Our apologies for an incomplete review.System Password is "PGHTSUG" (all in Capitol letters)

Flexi-BBS

This has been up (part-time) in Boston, run on an unexpanded 2068 using Casboard software. Temporarily down until further notice, it IS accessible via PC Pursuit. The Sysop is Bob Cutter.

QLCOM BBS

This board is run by the owner of Quantum Computing, Frank Toemay. It was first put up on a QL, but then taken down so that development could take place on the QL BBS software, and so it is currently replaced by a modified version of the ISTUG software on a 2068. This board acts as a temproary message base until the real QL BBS is ready. No Downloads currently, only message base.

Sysops Tell Their Story

System Operator's (SYSOPS) are a special kind of computer person. Operating a BBS takes a lot of dedication and hard work to maintain a quality service. Those of us who utilize their BBS systems owe them a hardy THANK YOU for a job well done. Some of the Sysops (and Co – Sysops) of the bulletin boards mentioned in Chapter 2, gracially provided additional information on their systems. We think you will find their comments interesting and informative.

BILL ERICKSON – BILL'S OBSESSION BBS

The system is an RBBS 14, constantly updated to perform better with T/S computers. Most menus have been modified to read better on a 32 column screen. Bill's Obsession will accept standard MTERM uploads with no modifications up to a full buffer. Feel free to make suggestions and comments about what you would like to see on the board. The more input from callers, the better the board will be for all.
P.S. It would be better if Timex users would not depend on a few to do all the uploading.

DAVID BAULCH – FWKUG BBS
Not only do they have a tremendous message section for various technical problems and software problems, but the download section, mainly for the Kaypro 8 – bit and 16 – bit, has some great software for CP/M for those with the AERCO 2.2 CP/M and the Zebra CP/M 2.2 disk systems. We will be trying to set up other sections for the TS 1000/1500 and Spectrum. (Since I know very little about the QL and the Amstrad models – nothing will be tried as of yet.) But, if you're in need of help on practically anything or any computer, the users are extremely helpful.

RICHARD KELSCH – LOONEY BIN BBS
The Looney Bin BBS is running on a Timex/Sinclair 2068. It has 512K of RAM disk for use as a message only storage device. The program is called "Spiffy BBS", and is written by myself. The only "physical" mass storage that I have is an A&J Microdrive that is only used as a message backup. Using it as a mass storage device is both slow and inefficient. That is why I designed the RAM expansion device, to solve this problem. The price of the RAM chips was much cheaper than a disk drive. The board does not support uploads and downloads yet. I will put one in just as soon as I can get enough money together to buy a disk drive. It is a board that has a lot of Timex/Sinclair support. It is intended as a system to "get away from it all." There are user submitted jokes that come up on the menu, right before the prompt, at random. I really don't care what type of computer is used, just as long as they respect everyone else's computer. (I don't like the phrase, "my computer is better than yours.") I also am glad to answer any technical questions about the system and any future products to be released by Membrain Microcomputers. If anyone would like to know more about my board, they are welcome to a conversation on the phone. (Editor's note – The original response by Mr. Kelsch describes his former setup. His latest Timex projects include making the Spiffy BBS commercially available as well as a RAM controller project. This exciting piece of hardware provides the ability of a TS 2068 to expand its memory to 16 megabytes! Be on the lookout for this one).

GARY LESSENBERRY – NIGHT OWL BBS

The Timex Zone was set up to support the efforts of the scattered Chicago area Timex users, although all Timexers are welcome and encouraged to call in. We are very receptive to any and all constructive suggestions for changing the Timex areas. We are accessible via PC Pursuit. The Timex Zone, like the Chicago Area Timex User Group (C.A.T.U.G.) is still very young and there will be many more changes with the BBS as we gain experience. The system has 7 mega – bytes of storage. TS – 1000 and TS – 2068 file transfers (text and programs) are supported using Xmodem protocol only. One quirk, the system stores data in 256 byte blocks and the Timex Xmodem transfers are in 128 byte blocks, thus, a file that is listed as 6 blocks (1536 bytes) will actually transfer in 12 blocks. Areas of interest to Timex Users on the Night Owl Special are: The Timex Zone (Command B2), The Timex File Transfer Area (Command UD), and the Timex Info section of the General Library File Area. Currently there are (3/87) some 20 + files available for download to either the TS – 1000 or TS – 2068. Both the text and the program files are available in the Timex File Area. Eventually, the Timex text files will be located in the general file area under Timex Info. For a detailed list of how to get around the Night Owl Special BBS, a person should send a SASE to: The Night Owl Special BBS, P.O. Box 641, Wheeling, IL 60090. Enclose a brief note with the envelope to request instructions.

WILLIE JONES – I.S.T.U.G. BBS

The major features of the system were designed to copy BBS selection on much bigger BBS'. Feature operation and selections were designed to work as one might be used to on some other BBS'. We offer a Quick Scan of the message base, a list of callers (if they call more than once). Caller has control of program moving to next feature at proper points. All messages left, fill the first available slot. Any message to the Sysop is LPRINTED.We currently have a 40 message base of 600 characters each. For Sysops of this program, the caller's name, time online, message numbers left, and messages read log are LPRINTED. All statements to callers, (Logon intro, bulletin and Quit BBS statements are in DATA statements allowing easy editing. To prevent the program from crashing when the caller's fat fingers commit an error that one would not expect, an extra amount of eerror trapping had to be brainstormed and then planned for. As of this date (9/86), we are 1/2 way to implementing a real time clock allowing us to add a more professional look to the caller. As well as date stamping the messages and Sysop LPRINTS.

When owners have compared our BBS with the others running on a T/S, they start demanding a copy of the program to run themselves. We will admit that the amount of callers has been less than we had hoped. When we informed those using Compuserve that we were up and to call, the response was less than we expected.

CHRIS RAYNAK – TSU BBS

The TSU is a system that tries to help a user in any way possible to get the most out of their computers. It may be downloading programs, or it may be finding spare parts for pieces of hardware. Users call from California to New York, from Canada to Texas all having Sinclair computers as their common bond. In the more distant future is the networking of a third system in the TSU line, the 2068! A recent breakthrough in a complete DOS for the Oliger Disk System in our local group will allow me to write a true BBS for this setup.

The change to 1200 B.P.S. modem made it necessary to remove the Commodore from the system, but now it is back online. As the system now stands, it has just over a MEG of storage, with over 200+K of T/S Downloads and 60K of QL Downloads. Users can write me for more info, but must include a S.A.S.E. A bulletin board is only as good as it's users. If you ever decide to call the TSU, have at least one message ready, or one file to upload. If you just read messages, and download all you can get, but never contribute, a system cannot grow. Your activity also has a bearing on what you can access and what you cannot. So why not join the fun instead of being an observer?

CHARLES STELDING - TYLER TIMEX BBS

I have modified the CASBOARD to include 50 registered names and ID #'s. It will automatically assign a new caller an ID and he must use it for the next logon. Another modification gives the exact time of day when each message was written which then appears on the message. There are 5 message bases, two of which are dedicated to Timex Computers. Downloads are available in either Hex, Ascii or Xmodem. Many unique programs are only available on this BBS, most are for the 2068. It is run on a Timex 2068 with two AERCO Drives. I may go to a CP/M system, but the Casboard seems to work fine.

ALEX BURR - QZX BBS

There have been some important changes in the bulletin board run by the Timex Sinclair Amateur Radio Users Group (TSARUG) for hams who use Sinclair Computers The main bulletin board, which features advanced copies of the articles for the group's newsletter, QZX, has been moved to (J.J.'s Fido)(505) 522-7081. An East coast bulletin board has been set up in North Carolina. It can be reached at (704)547-4185 (Teacher's Pet). It is available during evening (after 5 PM) and early morning (before 9 AM Eastern Time) hours and all day weekends. Both BBS' are standard FIDO bulletin Boards (the first is net 15/node 6 the second is net 18/node 9). The Sinclair Area for the first is area 18 and for the second area 7. It would be very easy to start a seperate T/S message base but I do not think it would be worth the trouble now. Most, practically all, the files in the Sinclair area are ASCII files. The Board will accept files in ASCII, HEX, XMODEM and several other protocols. Our relationship with the sysop is very good. It was QZX which started the BBS. The BBS will accept all the files we want to put in. For more information about TSARUG, the bulletin boards, or QZX (the group's newsletter) send a SASE to Alex F.Burr, K5XY, 2025 O'Donnell, Las Cruces, N.M. 88001.

LES BROWN - SERIAL PORT BBS

The Serial Port is running on an IBM compatible computer with 4 meg of hard drive capacity. The Timex Computers are supported by a SIG on a special Sub-BOARD. I write a small column on the sub-board but lately I have been a little short on material. I would be willingly put up anyones articles they care to send me on any Timex subject. The articles can be written or typed or best of all an MScript file. The Port has gone through a number of changes, although they still support 300 baud you cannot use the online games unless you have paid a $10.00 yearly dues or have 1200 Baud. They also support 2400 Baud. The best change is that you can upload a program to one person only, and only that person and the SYSOP can see it. This is performed much in the same way that you would leave an E-MAIL message but you can use any of the data transfer protocols available. This way if a friend has a CP/M file formatted for a computer that your system cannot read he can leave that software to you as E-MAIL.

JIM RODLIN - TIMEWARP

TIMEWARP is a cassette-based BBS program, written in machine code, for an unexpanded TS 2068 with modem and printer. It features two small message bases, a Bulletin file, chat mode, online clock/calendar, userlog with passwords, help + info screens, and a daily message. A new mail check is done at login, and other information (last login, logs so far, last message read) follows. The message base section allows a user to read, write, scan, and delete messages. Private E-Mail is also supported. All messages are dated. Feedback is dumped to printer to conserve memory. There are 3 levels of access: Sysop, Regular and Restricted. NEW users are restricted to read-only and feedback. Registered users get full access. A Co-sysop may be given zero level access which permits full sysop control. All system functions may be performed remotely as well as from the keyboard. Conversely, a user may log in from the keyboard as well as via phone. My BBS project began last September (1986) when I downloaded TINYBOARD from a board 3,000 miles away, only to find out that it didn't work well. I studied the program until I understood how it worked, and completely rewrote and expanded it until I ran out of memory (very quickly). The finished product was the original TIME_WARP, written in BASIC, very slow but otherwise OK. Then CasBoard came out and completely blew away TINYBOARD and it's offspring. Rather than conform with society and switch to CasBoard, I decided to redo TIME_WARP machine code and add some features that weren't on other T/S Based BBS'. The result, TIMEWARP, attempts to mimic the functions of larger computer systems (userlogs, remote system control, timed functions, etc.) It is a prompted, rather than menu driven system so it takes less time to use over long distance calls. The TIMEWARP BBS is open to all computer users, but it has a few areas of interest it concentrates on: Artificial Intelligence, TS Programming and (of course) Timex in General.

5

Message Bases

READING MESSAGES

To many people, the message base IS the BBS, and for them that's where the action is. It might be argued that BBS' can be classified into those which are primarily Message Base BBS' and those which are primarily for downloading/uploading. However, most T/S boards can't afford this specialization and generally try to provide both functions. The message bases are surely the easiest part of the board to access, and most people see the message base. By my count, we have at least 29 message base computers with a total of over 40 boards and sub-boards which are Sinclair-specific. This seems pretty amazing, if you think about it, and those bases have passed many megabytes of messages and friends; some extremely useful, others not so useful. Reading messages is fairly simple on most boards (see the chart in this chapter for the commands used). It's very advisable to capture these messages in your buffer and read them off-line, save them to tape or disk and keep them. There may be a number of messages there which seem absolutely meaningless or useless at the time, but six months later, they're pure gold! For details on using the buffer capture feature, refer to the chapter on Downloading. The generalized procedure for reading messages is as follows: 1) Get on the Main Menu or sub-board if necessary (on many boards such as the Timex Exchange, Looney Bin, ISTUG and other tinyboards, there is but one main message board). 2) Once on the main menu just enter "R" for read. It will usually ask you for more info, (ie. do you want to read messages in forward order or reverse, etc.). For your convenience, some of the sub-menu message commands from the boards discussed in Chapter 2 are presented in the Appendix. 3) If you don't understand the menu commands, most boards allow you to type "H" or "?" for online help instructions.

WRITING MESSAGES

Each BBS has it's own 'editor' which allows you to input messages; these vary from board to board. Most, for example, accept 2 carraige returns (CR) to signify the end of your input on a message, some don't. It's best to scroll through the help file with your buffer open, and then enter a message. Then print this buffer out when off-line and study it. Once you've done it a few times, it becomes familiar and easy. Many users shy away from entering messages for many possible reasons, 1) They may think of themselves as not having a great deal to contribute, or 2) The atmosphere of a long distance call gives them "Writer's block." I hope I can help solve these two problems right here. You must understand that posting messages are the basic element of a Message Base. You may not be the best Machine code programmer in 4 states, but that doesn't mean you have nothing worthwhile to say. Even if you just ask a question, it can be valuable. Because there may be someone on that board who knows exactly how to solve that problem and 5 people who have been wondering about it, but never thought to ask. By simply asking the question, you've helped out those 5 people (and maybe others who call in weeks or months later). Say you bought a new piece of hardware or software. While no one expects you to give the last word in review on it, a simple general impression of how you like it or dislike it would be beneficial to all who may be considering also purchasing the same item. In general, any discussion is valuable, and can further lead to some excellent conversation and perhaps generate additional messages.

Now, about that problem of "writer's block..." Everyone has their own way that's best suited to composing a letter. Some people MUST have a typewriter, others like to write long hand. But the atmosphere of a long-distance telephone call and a hunt and peck typing method are not a good combination for anyone. There are a number of techniques to beat this problem by the use of your buffer and/or macro keys. Some of these techniques are described in detail in Barry Carter's Manual on using Mterm II (Refer to Appendix for more information). First however, let me describe the editor in general. Let's say for example I choose "L" off the main menu to leave a message. The first prompt I receive is "WHO IS THE MESSAGE TO?" Here, I must enter the exact name of the person I'm addressing it to. If the spelling is incorrect, the input may be rejected (ie. some BBS programs search the user log to find the matching name, if not found then the input is treated as invalid). If I don't know how this person spells his or

her name, you can sometimes check this out using the User Log command at the main menu. You could also enter ALL or SYSOP as a substitute for a specific name. Now that I've entered the correct name, the next prompt will be "WHAT IS THE SUBJECT?" I can put just about anything for a subject, but since its purpose is to allow those who SCAN the messages to get some idea what this message contains, it is best to be somewhate descriptive (eg. TS2050 modem pokes). It then may ask you if your want the message to be "PRIVATE?" If you do (note, most private messages can only be read by the person to whom the message is directed to) then type "Y." You then may be asked for a "PASSWORD." Unless you have an arrangement in advance, just hit (ENTER) here. The purpose of the password is to prevent the message from being killed (ie. deleted) by the wrong party. However, if you do enter a password, and the intended recipient doesn't know the password, they will not be able to read or kill it either. Finally, you will be given a prompt like "ENTER MESSAGE TEXT." At this point, you can simply key in a message just as you would on a typewriter (with some important differences). Some boards have a feature called Auto Wrap, other do not. For those that do not have this feature, once the end of the current line is reached, you must hit (ENTER) to start the next line. For those with Auto Wrap, characters can typed to the end of the line and will then automatically "wrap" to the next line eliminating the need to hit (ENTER).

On most systems, to signify the completion of the message, two carraige returns (ie. two ENTERS) will illicit a special editor menu such as – (L)ist, (C)ontinue, (E)dit, (S)ave, or (A)bort? If you choose, continue, you be able to simple add on to the message you have so far. If you had a spelling mistake,and you want to go back and fix it, then key in "E" for edit. You will need to know the line number on which the mistake occurred, and sometimes the exact text you input on that line, character for character, space for space. When you're all done and satisfied, enter "S" for save. There will be a slight pause and the host computer saves the message to disk. If for any reason you miss this last step, (eg. the message got all typed in and then a disconnection occurred), the message would be lost. In this event, you will have to re – enter the message and once again issue the save command. Now let's examine how we can automate this process so you don't have to hunt and peck online.

	SOFTWARE	READ CMD	ENTER MESS. CMD	'AUTO WRAP'	CHARACTERS/LINE MAX. # OF LINES
BILL'S OBSESSION	RBBS-PC	R	E	Y	70 char x 38 lines
COMPUSERVE	N/A	R	L	Y	80 char
FWKUG BBS	MBBS	R	E	Y	72 char x 16 lines
ISTUG BBS	ISTUG	R	L	Y	534 char max.
LOONEY BIN	ATARI	R	E	Y	80 char x 20 lines
MCI MAIL	N/A	READ	CREATE	N	80 X (no limit)
NIGHT OWL		R	P	Y	80 char x 50 lines
OMNI NET	TBBS	R	L	Y	2048 char max.
OWEGO FREE ACAD		R	E	Y	
PEOPLE LINK	N/A	/R	/P	Y	
SERIAL PORT		R	L	Y	75 char (2048 max)
THE SOURCE	N/A		POST	Y	80 char
STARTEXT	N/A		MAIL		
TIMEXCHANGE	MBBS	R	E	Y	72 char x 16 lines
TSU BBS	BBCS	A	C	Y	132 char x 14 line
RMG BBS	CASBOARD	R	W	Y	255 char x 18
TYLER TIMEX	CASBOARD	R	W	Y	255 18
KING'S MARKET	TBBS	R	L	Y	132 char-2048 max
LOCAL TECH	TBBS	R	L	Y	132 char-2048 max

USING YOUR BUFFER TO PREPARE MESSAGES

By far the easiest way I've found to use your buffer to prepare messages prior to logon is with the ZTERM64 program which allows you to type directly into the buffer just before you call the BBS. It will also insert carraige returns at the end of each line or at the end of each paragraph automatically or not at all if you choose. The great advantage to this system is you don't need to load any other software besides the terminal program and you don't need to save it to tape. The disadvantage is that there's a possibility you won't be able to get online to the desired BBS (eg. line busy). In this situation, you can either wait patiently until the line is free, or save the message you wrote to tape for later loading, or simply clear it and call some other BBS. You can also type into the buffer of Mterm II (as described in Barry Carter's supplementary Mterm II manual). Mterm II does require connecting in half duplex, with linefeeds ON and going into the terminal mode. From there, anything you type will go into the buffer (provided the buffer is open, of course).

Another alternative method is to use REM statements. Here, you would write a letter as you would put remarks at the beginning of a BASIC program. For example:

```
10 REM Hello John, glad to hear from you again (ENTER)
20 REM The info you're asking about is in TS (ENTER)
30 REM Horizons, I forgot which issue. Early (ENTER)
40 REM this year sometime. Good Luck, BOB (ENTER)
```

You could either save this program to tape as is, or you could have loaded Mterm II first, then escaped to BASIC and typed this in. Obviously, such a short message would be no problem to input while online, however it is only an illustration. When you're ready to input the message itself, make sure the CONversion setting is set to REM conversion, then just choose "T" for transmit from the data buffer menu. Your message will then be entered on the BBS minus the line numbers and REM statements. Only "Hello John, glad to hear from you again...." etc. will go to the host computer. Once the whole message is up, hit (ENTER) twice to tell the host system that you're done inputting the message. You will then be given the editor menu which was described earlier. Always (L)ist the message just to verify that all was received intact and without errors. If it's missing something, you can always edit the message. Then finally, be sure to (S)ave the message when you're satisfied. Using this method could very well cut a lengthy message online to a couple of minutes.

One thing I haven't explained is fitting the message into the format of the host (or BBS) system editor. If the BBS editor doesn't have autowrap, then only a limited line length is permitted. This may be 80 columns, or the screen width you indicated when you first logged on the system, or perhaps some other number pre-set by the BBS software. If this is the case, you need to know what that limit is so you can tailor your REM statements accordingly. Also, there is a limit on the maximum number of total lines for a given message. If you try to upload a 35 line message to a host system that only allows 34 lines maximum, the last line will be lost. Some boards (such as Bill's Obsession BBS) has the choice between (L)ine or (B)lock entry for the input of a message. With line entry, you have a normal setup – that is, whatever your screen width input is, designates the length of a line with each line terminating in a carraige return. For block entry, a full 256 characters can be input in a single string without a carraige return at the end of each line. This can be easier to manage than using a-line-at-time approach.

If the host you are dealing with defines your line length as the same number of columns you entered as your screen width, you can change this by selecting the (U)tilities section off the main menu. This will allow you to write longer messages. One other method that could be utilized is to define the Macro Keys to enter a short message (eg. logon name, password etc.). The use of Macro Keys in Mterm II is explained in Barry Carter's Mterm II manual and those interested should refer to this document.

E–Mail

E–mail or electronic mail is a simply a message, however the sending and receipt of this type of message is confined to the sending and receiving party only (in most cases the Sysop can view these too). Inputting procedures are essentially the same as those outlined for regular messages. However, in some boards (eg. TSU BBS), a special area is accessed to send or read E–mail messages.

MCI MAIL

MCI mail is an international form of E–Mail. It allows you to send an E–mail message up to 600 characters in length for only 45 cents. This message goes instantly to any of over 60 countries around the world. One catch is that both you (the sender) and the recipient must be MCI "boxholders." The service costs $18/year as a flat fee. Then you are billed for messages you send separately. If your message exceeds 500 characters but is less than 7500 characters, then it will cost you an additonal $1. An additional dollar after that for every 7500 characters on top of that. The other provision, is that the recipient must check their mailbox (call in on their modem). If they are not expecting any mail, they may not encounter the message for days. As I mentioned earlier, a number of those in the T/S community subscribe to MCI mail, and it can serve as an excellent meas for those of us who are serious to communicate.

It also has other features, such as being able to send a hardcopy letter to people overseas. That is, it travels to the country in question electronically. Once there, it is printed out and either dropped in the local mail or delivered by courier (depending on how much you want to pay). For more information, see the Appendix F– "Pay Systems."

FEEDBACK TO THE SYSOP

This is a private mail like function which goes straight to the Sysop. On some systems, this is the only place you can post when you logon for the very first time. As noted earlier, this is not the recommended place to ask questions. If you have a question to ask, then ask it in the general message base. That way, when the Sysop answers it, the reply can be read by all other callers, and possibly clear up some confusion that other users may have been experiencing.

CHAT MODE

You may find out about the CHAT mode without realizing it. You may be having trouble one day and suddenly on your screen will appear, "Entering Chat Mode..." This will be the Sysop or Co–sysop sitting at the terminal typing in real–time. They may offer advice about what you can do to accomplish your goal, or they may just want to say "hello." Chatting is very pleasant, but if you're calling from long distance, be mindful of the fact that you can burn up to a half–hour in no time. It's not the cheapest form of communications. However, if you're calling local or on PC–Pursuit, there's no problem. CHAT away to your heart's content.

6

Downloads and Uploads

Contrary to popular belief, the process of downloading and uploading files is EASY! It is far more complicated to use Mscirpt or Tasword 2 than it is to download a program. First of all, let's talk about the easiest form of downloading, the capture buffer.

THE CAPTURE BUFFER

What the capture buffer does, basically, is to take everything scrolling down your screen when you're online, and throw it into memory. With some terminal programs, it will be saved to disk or microdrive automatically. With others, you have to do the save manually. Comparitively, the buffers from the various terminal programs are as follows:

PROGRAM	BUFFER SIZE	METHOD OF DATA STORAGE
Z – COM (with 64K)	48K (approx.)	REM statements only
MINI – XMOD (64K)	14 + K or 11 + K*	REM statements
Mterm II	27 + K	Binary file
Mterm II + Loader V	27 + K or 19 + K**	Binary file (Mscript Compatible)
Spectraterm 1.3	32 + K	REM statements only
Zterm 64	17 K	Binary file (Mscript Compatible)
Modem753	To disk auto.	Binary file
Specterm 64	31 + K	Binary file (Tasword 2 Compatib)
QCODE	To disk or microdrive	Binary file

* 11 + K with 16K Rampak

** Loader V comes in 2 versions. One doesn't alter size of the buffer, the other version does.

Note that it is possible to save to disk, microdrive or possibly to tape WHILE – ON – LINE! This is especially easy with disk as it takes but a few seconds to acomplish. Those terminal programs which have the capability to save to disk or microdrive offer a tremendous feature. This is particularly true if you capture data at 1200 baud since, at this rate, the buffer will fill up very fast. (Zterm 64 was originally intended to automatically save the buffer to disk or microdrive, but to date, this feature has not be implemented by Zebra Systems).

USES FOR THE CAPTURE BUFFER

1. To capture menus, help files and system rules
2. To capture messages
3. To capture text files

The use of the capture buffer is vital to your entire telecommunications experience. Your first use would be to capture all the menus, help files and system rules for each BBS. The first two items (menus and help files) should then be printed out for future reference. I find it useful to xerox these since the paper is better and you can duplicate the information on both sides. Sometimes up to four menus can be placed on a single side of a sheet. I then put these in a loose leaf binder which can easily be amended (Sysops are forever changing their systems in their continuing effort to improve the BBS). To this, you can also add your own personal notes to help you remember things the next time you call. It was our original intention to include ALL this information in this guide, but this alone would account to over 20 pages. You'll find in the Appendix selected menus from the BBS' described earlier.

Now, you can see what files are available. Text files are usually indicated by the file extensions (ie. the characters to the right of the ".") as either ".TXT" or ".DOC" (short for documentation). Let's try capturing the documentation file for the program RLEPRO. To view this file, type the CP/M command "TYPE RLEPRO.TXT" at the "D2>" prompt followed by (ENTER). Make sure your capture buffer is open before issuing this command though. The contents of this file will then be displayed on your screen. As one screenful of information is displayed, the additional lines will scroll on. At any time, you could type CTRL S on the keyboard (for Mterm users this is represented by holding the CAPS SHIFT , 7 , S keys in succession) which will halt the automatic scrolling and allow you to view the information at your own pace. To resume scrolling, simply type CTRL Q. For this example, RLEPRO.TXT is well within the buffer capacity (as evident by the 4K notation next to the file name), so the entire file will be stored. You can then save the buffer to tape for viewing at a later time.

In the event, the file size was greater than your buffer capacity, an alternative might be to print the file on your printer (either the TS2040 or full-size printer) by setting Mterm, Zterm 64, Modem753, or QCODE for continuous printout. In this case, you would have your buffer closed. Remember though, programs like Modem753 and QCODE have the capability to save directly to disk or microdrive, so you shouldn't have a problem of a limited buffer capacity.

SAVING THE BUFFER WHILE STILL ONLINE

It is possible to save and clear a buffer while still online. Most BBS' will recognize the CTRL S command to halt the screen scrolling. Therefore, if your buffer is reaching capacity, issue the CTRL S command to halt the transmission. Other methods of interrupting transmission (without having to log off) are CTRL A, CTRL K , CTRL X or CTRL C. Which one works as far as aborting the program will depend on the type of BBS software system. Once you're at a spot where the host system is waiting for an input from you, simply escape to BASIC (for Mterm or Zterm 64 programs) or enter "S" in the command mode (for Specterm 64, tape saves only). For saving online using other mass-storage devices (eg. microdrives, or disk drives), refer to the operating instructions of the particular terminal program you use.

Once you've saved the contents of the buffer to tape, disk or microdrive, remember to clear the buffer once again before returning back online. One final note regarding saving buffer information online; recall earlier that the host is waiting for some instruction from you during the entire time you've been saving to tape or disk. Some BBS systems have a time limit of waiting for a user response. This time limit will vary (anywhere from 2 — 5 minutes of inactivity) from system to system. If this time is exceeded, the BBS will sometimes automatically log the user off. You can see the reason for such a feature: someone could tie up a system indefinitely! So, just be concious of the amount of time you've taken if you practice this procedure.

> **Quik Tip!**
>
> A good source of practicing the above procedure is any local calling board in your area. Most boards regardless of what systems they support usually have text files available. Try practicing on these boards (you might even ask the Sysop for help if you're not quite sure on how its done). In this way, the cost of the phone call is minimal. Once you feel comfortable and confident, you can then try one of the long distance Timex boards and get some good information!

THE VALUE OF BUFFER SAVES

Capturing buffers and saving them to tape, disk or microdrive can serve several purposes:

1) Capture all the help menus from each BBS. As mentioned earlier, I keep a notebook with each BBS' help menus for easy reference.
2) Capture HELP files. Some boards have a separate and much more detailed help file which explains all of the functions supported on the system. Instructions for uploading and downloading can also be found in these files.
3) Save all the messages. Remember, messages which look Greek today, may turn to gold a month from now. Consider sharing information found in those messages (even if it doesn't concern you) with other members in your users group. That's the whole purpose of tele communications; namely, the sharing of information amongst all!

EDITING BUFFER SAVES WITH A WORD PROCESSOR

Using one of the word processing programs (ie. Tasword 2 or MSCRIPT) for the TS 2068, it is relatively easy to edit a text file captured and saved from a BBS. This ability allows you to edit the text in any way (eg. delete information that is unwanted), and save the new version to tape or other mass – storage media for future reference. There are several ways this can be accomplished. One of the easier combinations is to use Specterm 64 software, which has the capability to load a buffer directly into Tasword 2 with no alteration. For Mterm II users, a program called LETTERWRITER/ BUFFERWRITER allows you to edit files which have been captured in your buffer. In addition, the program allows you to compose messages as well and load them into the buffer. This can then be used to transmit or upload text files once online. The editing capabilities of this program do not offer the features or sophistication of Tasword or MSCRIPT but should suffice for smaller files. Another major enhancement for Mterm II users is the Loader V series of programs offered by Kurt Casby. Loader V has the ability to load Tasword 2 or MSCRIPT files directly into the Mterm buffer for transmission. Using a program called "UNLOADER" (also provided with Loader V), you can take any Mterm buffer text file and convert it into Tasword 2 or MSCRIPT files for easy editing.

Can the above process be done without extra software? The answer is YES. The following information was written by Mark Fendrick and was "captured" from the Omni – Net BBS:

"...here is the procedure for sending MSCRIPT files using Mterm and the 2050 modem:

1) Save your MSCRIPT files to tape as normal. (You may find that for some systems you may have to enter a carraige return (CR) at regular intervals depending on the host system. By setting the line length (window) to one character less than you desired final form, you can go to the beginning of each line, press (ENTER) and easily add the required (CR's)).
2) Remove your MSCRIPT tape, and then on a blank tape, start recording, and type: SAVE "text"CODE 26710,20000 and then press (ENTER). You may remove this tape as soon as the header has been recorded. Remove this tape.
3) Put your MSCRIPT tape back into the recorder and type: LOAD "" (ENTER). When the header has passed (you will not see a program: or bytes: information) stop the tape immediately. Turn the right hub clockwise one half turn and then remove.
4) Play the dummy header tape and remove it as soon as the header is read. Then, put the MSCRIPT tape in and play it. This should now be read in, and will stop with an error message (that is OK it does not mean that there is a problem).
5) Load Mterm, but do not type PRINT USR 54016.
6) POKE 23628,200
7) Now Type: PRINT USR 54016. You should now have your file in the buffer.

Some additional notes on the above procedure:

- The address 26710 represents the starting address of the Mterm buffer.
- PRINT USR 54016 is the instruction given to run the Mterm machine code program.
- POKE 23628,200 is necessary, since the variable VARS normally points to the end address of the buffer area (ie. 26710).

DOWNLOADING SOFTWARE

For some reason, there seems to be quite a mystique surrounding the process of downloading programs from BBS'. Believe me, this has no basis in rational thought. Downloading is EASY! It's far more difficult to learn the commands for Tasword 2 or MSCRIPT than it will ever be to learn how to download a program. The best way to learn is to have somebody show you how to do it. There is no substitute for hands – on experience, and incidentally, doesn't this sound like an excellent workshop for a users group meeting? In the descriptions below, I have tried to cover as many different combinations as possible.

One problem Timex computerists faced for some time was a lack of appropriate software to accomplish the task. I hope you can see from this guide, the tremendous progress that has been made in this area! Until the relatively recent arrival of Xmodem protocol for our computers, the only available methods were straight ASCII and HEX transfer, neither of which possessed any type of error checking. ASCII is suitable for text files, since a character lost or gained during the transmission is not going to ruin the information to a significant extent. However, there are two potential hazards in attempting to download programs through ASCII transfer:

1) The ASCII character codes used consist of 128 possibilities. About 100 of these are harmless in terms of they have no adverse effect on your computer as they stream into the buffer. However, the remaining 20–28 are "Control" type codes. That is, they do things like ring the keyboard bell, open and close the buffer automatically, etc. If any of the ASCII codes stream into your buffer that happen to be one of these control codes, it may very well corrupt the contents of your buffer and you'll probably encounter an INVALID COLOR or some other bizzare error message when you attempt to list the program. Fortunately, most of the BASIC programs uploaded to BBS' using Mterm II software arrived intact, since the majority of the programs were comprised of the "safe" 100 ASCII codes. On the other hand, machine code programs could very easily utilize any of the 128 codes, and consequently may not transfer properly using ASCII.

2) The second problem you may encounter is "line" noise. Line noise can happen at any time during the online transmission and ruin a program. You've undoubtedly have seen the effects of noise while just reading messages on ocassion as evident by the "garbage" characters sprayed onto your display. Imagine these characters mixing in with the transmission of a program — instant disaster! Have you ever seen the message on the bottom line (using Mterm) alternating between BUFFER OPEN BUFFER CLOSED? This is caused by an unwanted control code (CTRL T) which is being sent by a noisy line. One way to avoid this problem is to convert the program into its HEX value equivalent of the ASCII codes at the transmitting end and then back to their ASCII codes in the receiving computer. This procedure minimizes the problem of control codes effecting your computer during transmission. However, this still does NOT provide any type of error checking.

Enter Xmodem transfer protocol. There are currently 6 different programs which support Xmodem transfer protocol for the T/S computers: 3 for the TS 2068 in the normal mode, 1 for the TS 2068 in CP/M, 1 for the TS 1000/1500, and 1 for QL. This represents a significant improvement for T/S modeming. It means that downloading/uploading can be fast and error free, and hopefully lead to the establishment of new T/S related boards across the country.

TRANSFER PROTOCOLS

A. ASCII TRANSFER

The name "ASCII" stands for the American Standard Code for Information Interchange, an international method of representing information in computers. Each character is represented by a numeric code (eg the letters "A" thru "Z" correspond to the ASCII codes 32 -90 respectively). The ASCII transfer protocol simply transmits each ASCII character code one by one. No error checking is involved. This method of transfer is more suitable for text or documentation files, since transmission errors which may occur would probably not disrupt the contents of the file to any significant extent. Since the method involves no error checking, it is somewhat faster than a procedure such as Xmodem (see below) which does employ error checking. Since some of the ASCII codes may be different than the codes used on T/S computers, all T/S terminal programs have a routine which translates from one type to another. The terminal software which possess ASCII transfer protocol capability are: Mterm II, Zterm 64, Modem7&9, and Qcode.

B. HEX TRANSFER

One problem associated with ASCII transfer is that some of the codes sent can be interpreted as actual commands and thus influence the actual operation of the computer. To overcome this, HEX transfer was implemented. HEX transfer protocol takes the ASCII characters (which are in decimal representation, and converts them to their HEX equivalent before transmission. In this way, neither computer will act on a command since the HEX numbers don't constitute commands. Though this protocol is an improvement over straight ASCII for the transfer of programs, there is still no error checking done. Software which has HEX transfer capability include: Mterm II, Zterm 64.

C. XMODEM TRANSFER

Xmodem is one of the most widely used transfer protocols in use today. Originated by Ward Christensen in the early 1970's, it provides a method of error checking during the transmission process thereby assuring an error free program upload/download. (Editor's note: Mr. Christensen can be reached on Compuserve, on the IBM NEW forum, which he visits frequently). The method of transfer involves sending a block of 128 characters, adding up their values (VAL) and then sending this "checksum" for the total block at the end. The receiving computer can then compare the checksum with the actual values it receives, and if they don't match, it scraps that block and requests for it to be sent again. It will attempt to try several times (the actual number of re–attempts will vary depending on the program used). Most programs have some finite number of re–tries after which the transfer will be aborted (eg. Loader V TSXmodem will attempt to re–send the block 10 times before terminating the process).

Xmodem has two nice features, 1) it makes transfers about 99.9% error free, 2) it can be used for any type of computer. For example, if you are operating a BBS using the new Casboard 2068 which supports Xmodem transfer protocol, a person with an Apple or QL or any other computer with a terminal program supporting the same, could upload or download a file. There are some variations in different versions of Xmodem. The original version is known as the "checksum" method. All the T/S terminal software which currently supports Xmodem utilize this method. A newer version exist known as the "cylindrical redundancy checking" or "CRC" method. Some bulletin boards may attempt to initially upload or download a file using the CRC method first. If the first 5 attempts to send or receive should fail, it then may switch automatically to the original checksum procedure. Volumes of information have been written on the topic of Xmodem. You might try searching the database text files for more information if you want to learn more about this topic. It should also be mentioned that on some RCPM systems you may encounter a version of Xmodem called KMD (NUKMD). This version allows 128 and 1K blocks and bulk file transfers in both upload and download. The program can also detect which protocol you are using. An automatic feature of switching to transfer 128 byte blocks will occur if too many errors occur in the 1K packet mode. Regardless ot the version used on the BBS, the T/S programs which provide Xmodem transfer will work with either program.

FINDING THE FILES

Having discussed the various modes of transfer protocols available for the T/S computers, it is readily apparent that there can be several different formats a given file can exist in. In many cases, the different formats are incompatible with each different transfer protocol (ie. one cannot download using HEX transfer a file that was originally uploaded using Xmodem etc.). So, the next question is where can you find the different file types ? After studying the various BBS' that support T/S file transfer, we've summarized the different file transfer protocols in the table below. Many of the boards still support HEX transfer, however Xmodem protocol is becoming more of the standard for T/S file transfers.

	ASCII	HEX	MINI XMOD	Z COM	SPECTRATERM	CASBY XMODEM	SPECTERM 64	ZTERM 64	QCODE ASCII	QLTERM	RLE FILES
Bubbs BBS	Y	N	N	N	N	Y	N	N	N	N	Y
Bill's Obsession	Y	Y	N	N	N	Y	Y	Y	Y	N	Y
Compuserve	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
FWKUG BBS	Y	Y	N	N	N	Y	Y	Y	Y	N	N
King's Market	Y	Y	N	N	N	Y	N	N	N	N	N
LT BBS	Y	Y	N	N	N	Y	N	N	N	N	N
Night Owl Special	N	N	Y	N	N	Y	Y	Y	N	N	N
Owego Free Academy	Y	N	N	N	N	Y	N	Y	Y	N	N
Serial Port	Y	Y	N	N	N	N	N	N	N	N	N
Startext	N	Y	N	N	N	N	N	N	N	N	N
Timex Exchange	Y	Y	Y	N	N	Y	Y	Y	Y	N	Y
The TSU BBS	Y	N	N	N	N	Y	N	Y	Y	Y	Y
Tyler Timex BBS	Y	Y	N	N	N	Y	N	N	N	N	N

The only known source for both Z-Com and Spectraterm 1.3 files (both Byte-Back products) is the Compuserve T/S SIG. This is probably due to the lack of error checking routines and the fact that most users now have TS 2050 modems. Another hard to find format is the Mini-Xmod TS 1000/1500 downloads. They are available on three boards (Note: However, TS 1000/1500 files are available by request only on the Timex Exchange; leave a message for the Sysop if interested). QL programs in Xmodem format are still hard to come by, however I suspect this may increase in the future. Keep close watch in particular on Compuserve, the TSU BBS and Timex Exchange in this area.

HOW TO DOWNLOAD

In looking at the various download procedures on the BBS', there are basically 2 general types of setups: 1) Menu driven systems, 2) RCPM's or MBBS's which allow more user control over the process. The following examples are presented:

1. ASCII download w/Mterm II (Menu driven BBS format)
2. ASCII download w/Mterm II (RCPM)
3. HEX download w/Mterm II (RCPM)
4. Xmodem download w/Mterm & Loader V TSXmodem (RCPM)
5. Xmodem download w/Specterm 64 (RCPM)
6. Xmodem download w/Zterm 64 (menu driven)
7. Xmodem download with Modem753

Now get ready folks, you won't BELIEVE how easy it can be!

A. ASCII DOWNLOAD W/MTERM II (Menu driven BBS)

Step 1. Load Mterm II with LOAD " CODE 54016
2. Following a successful load, type PRINT USR 54016 (ENTER)
3. Press (ENTER) to go to the Main Menu
4. Choose "D" for Data Buffer Menu
5. Make sure the buffer is empty, closed, and conversion set to NONE. If not change to these settings.
6. Logon to the BBS (in this working example, we'll logon to the TSU BBS)
7. Once logged on, select "D" for Download from the Main Menu
8. You will be taken to the TSU Download area where you now select "A" for Download A Text File.
9. All current text files will be listed, and a prompt will ask for the filename to download.
10. For this example, let's key in the filename "TSFEST" (without the quotation marks). At this point the BBS will calculate the send time and displays something like this:

    FILE SEND TIME:
    Minutes: 1
    Seconds: 5
    Protocols:

    0) ASCII
    1) Xmodem (Amodem type)
    2) Xmodem (Standard)
    3) Abort

11. Choose "0" for ASCII after which the display shows the following message:

    Ready to send
    Control C to Abort
    Press Any Key to continue

12. Now, open the Mterm buffer by pressing CAP SHIFT 8 to get back to main menu. Goto the data buffer menu once again and open the buffer. Once the buffer is open, hit (ENTER) twice to get back into the terminal mode. Then press any key to start the download process. There will be a slight pause, and then you should see the document in question begin to scroll up your screen. One word of caution – try to minimize the amount of time you take to exit the terminal mode and open your buffer. Most systems will only wait so long before automatically aborting the download request.
13. Once the entire file has been transmitted, the last line of text will stop scrolling. At this point, exit the terminal mode once again and close the buffer.
14. Choose the View buffer option from the data buffer menu to see if the file was received intact. Download is complete.

B. ASCII DOWNLOAD W/MTERM II (RCPM SYSTEM)

1. Follow steps 1–5 listed above.
2. In this example, we'll logon to the Timex Exchange BBS
3. After the logon preliminaries, choose "C" at the main menu to enter CP/M.
4. At the "A0>" prompt, type "D2:" to switch to drive # 2.
5. At the "D2>" prompt, type DIR (ENTER). A list of the text files residing on this drive will be displayed.
6. Now, type in the word "ASCII" (without the quotes) followed by (ENTER).
7. You will be asked if you want to Upload or Download. Type "D" for download followed by (ENTER).
8. When asked for the filename, type in the desired name (eg. SURVEY.TXT).

9. For the next two prompts which appear – "Expand CR to CRLF ?(Y/N)" and "Strip LF from CRLF?(Y/N)" answer "N" to both.
10. When asked for a "Timed or Prompted Start", type "p" for prompted.
11. It will then tell you to "press return" when ready to send. Similar to the previous example, we must first exit the terminal mode and open the buffer just like we did above.
12. Once the buffer is open, hit (ENTER) twice to return to the terminal mode and then one more time to initiate the download process. You should then see the information scroll up on the screen, line by line until the last line is reached.
13. At the completion of the file, you'll get the CP/M prompt "D2>" once again. At this point, exit the terminal mode and enter the data buffer menu to close the buffer.
14. Now choose View the file once again to verify the receipt of the selected file.
    Download procedure complete.

C. HEX DOWNLOAD WITH MTERM II

Although downloading using MTERM II HEX conversion protocol is not recommended due to the lack of error checking during the transmission process, the procedure is listed below for those of you who might not yet have an Xmodem program. (It is highly recommended that you consider purchasing a program that supports Xmodem protocol as many BBS' are eliminating HEX type conversion protocols)

1. Load Mterm the usual way (see steps 1–4 of the first example).
2. Enter the data buffer menu, ensure the buffer is empty (if not, clear it at this time), closed and the conversion set to HEX.
3. Logon to a BBS (in this working example, we'll once again use the Timex Exchange).
4. After logging on, once again choose "C" from the main menu to enter into CP/M.
5. This time at the "A0>" prompt, type "B2:" (ENTER). This is where TS 2068 files transferred using Mterm HEX procedures reside.
6. At the "B2>" prompt, type "DIR" to get a directory listing of the current files. Once you've identified a file you wish to download, type "QMTERM" (ENTER).
7. After a momentary pause, you will see a menu display. Choose "S" to send at which time the prompt will ask for the filename. Type in the name of the desired file (eg. SIMON.TS) followed by (ENTER).
8. In a very short time, you will see the message..."searching for file" then the QMTERM program will automatically open the Mterm buffer and begin the transmission process.
9. At this point, you will begin to see the HEX code numbers scroll up onto the screen. Finally, when the entire file has been transmitted, the "BUFFER CLOSED" message will appear on the bottom line, and the QMTERM menu will once again be displayed. (Note: If you have a problem, the QMTERM program does have a HELP screen).
10. Once the QMTERM menu reappears, you may choose to exit to BASIC at this time and save your program. (Note: QMTERM was written by Dave Clifford and is found only on the Timex Exchange BBS in drive B2).

D. XMODEM DOWNLOAD W/MTERM II AND LOADER V (RCPM SYSTEM)

1. Load Mterm II the normal way but DO NOT type PRINT USR 54016 yet.
2. Load Loader V using LOAD "", but DO NOT RUN yet.
3. Advance the Loader V cassette and load TSXmodem using LOAD "TSXmodem"CODE. Once this program has loaded, type RUN (press "R") followed by (ENTER).
4. Now you'll see the Loader V main menu. Select "1" to run Mterm.
5. Hit (ENTER) to get the Mterm Main Menu, then choose "D" for data buffer menu.
6. Since the BASIC program of Loader V is still in the buffer, clear it out at this time. Also, make sure the buffer is closed, and set the conversion to "NONE".
7. Logon to any RCPM system. (For this example, guess which one we'll logon to – The Timex Exchange!)
8. Choose "C" from the main menu to enter into CP/M. At the "A0>" prompt, this time we'll type "A2:" (ENTER). This is the drive number that contains T/S programs uploaded via Xmodem.
9. Type in "DIR" (ENTER) to view the directory of this drive. Identify a program you wish to download.
10. If you're not sure what the program does, use the TYPE command to view the accompanying "DOC" file (if there is one). You can then CTL C to end the listing and return to the A2> prompt. Now, to download the file you want, type "KMD S filename" followed by (ENTER). (On the Timexchange, KMD is a version of Xmodem. Other RCPM systems may be using the original Xmodem program as well. Either will work just fine. Also, on the Timexchange, programs up-loaded with Xmodem have the extensions .TSX (for Loader V TSxmodem, or .SPX for Specterm 64 Xmodem transfer).

11. After a slight pause, you see:

```
KMD v21(c)
File open: MDCAT.TSX
Send time: 2:35 at 300 Baud
File open – ready to send
Aborts with several CTL - X
```

12. At this point, exit the terminal mode and exit into BASIC.
13. Once in BASIC, type in "PRINT USR 24415" (ENTER). The screen will clear, and there will usually be a slight delay while the 2 computers attempt to synchronize the Xmodem transfer. When you begin to see "+" signs one-by one across the screen, the Xmodem process has begun. Recall from the earlier discussion of Xmodem protocol, the "+'s" represent each successful 128 byte block of data sent.
14. Once the last block has been sent, you will automatically return to Mterm. At this time, simply press (ENTER) to get back into the terminal mode. At the "A2>" prompt, type "BYE" (ENTER) to log off.
15. Now, let's save our program to tape (or disk, or microdrive whichever you use). If the program that you downloaded was a machine code program, exit to BASIC and save it using the following commands:

    SAVE "FILENAME"CODE 26710,filelength (where file length = the number of bytes indicated in the Mterm buffer)

    If the file was a BASIC program, then simply type: SAVE "FILENAME". You may wish to also VERIFY at this time.

E. XMODEM DOWNLOAD USING SPECTERM 64 AND A TS 2050 MODEM (RCPM SYSTEM)

Specterm 64 is a very versatile terminal program and can be configured in a number of different ways with the addition of the G & C Z-SI/O RS 232C Card to any number of compatible 300/1200 baud modems. For this example, we have configured it to operate with the TS 2050 modem.

1. Load Specterm 64 using LOAD "".
2. Engage the "CAPS LOCK" function.
3. At the local control menu, choose "2" to run Specterm. At the title page, press any key to enter the terminal mode.
4. Follow the instructions for logging on to an RCPM system like the Timex Exchange as described in the previous examples. Once again, select the drive containing the Xmodem Timex files (eg. A2:).
5. Obtain a directory listing of the files currently residing on the drive (ie. Type "DIR" (ENTER)) and select a file for download.
6. Type in the Xmodem command (remember on the Timex Exchange, the program name is KMD) as follows: KMD S filename (ENTER). Shortly, you should see the following information:

```
KMD v21 (c)
File open: MDCAT.TSX
Send time: 3:35 at 300 Baud
File open – ready to send
Aborts with several CTL  X
```

7. At this point, key in CAP SHIFT 1 to get the Command Mode of Specterm, and press "R" to receive. There will be a slight pause, and the letter "R" should begin to blink in the upper right corner of the screen. At the completion of the download, the "R" will stop blinking and you will return automatically to the terminal mode (Note: Ensure the settings are 8/1/N).
8. Logoff the BBS at this time by typing "BYE" at the CP/M prompt.
9. Put a fresh tape in your cassette recorder and goto the command mode once again using CAPS SHIFT 1.
10. Start your recorder (in the record mode) and press "S" to save the program. (Note: a nice feature of Specterm 64 is the automatic inclusion of the filename for you).

F. XMODEM DOWNLOAD USING ZTERM 64 (MENU DRIVEN SYSTEM)

1. Insert OS-64 cartridge and power up TS 2068.
2. Load Zterm with LOAD "".
3. Choose the appropriate storage device and printer interface.
4. At the Main menu, choose "D" for Data Buffer Menu.
5. Ensure the buffer is empty and closed. Hit (ENTER) twice to get back into the terminal mode.
6. For a change of pace, we'll logon to a menu driven system like Bill's Obssession BBS.
7. After logging on the BBS, enter "F" from the main menu to access the Files Section.

8. From the file menu, enter "L;1" to switch to the Timex File Section (be sure to include the ";").
9. Find a file name to download (eg. 64COL.TSX). At the file menu prompt, type "D" (ENTER).
10. The prompt will then ask you for the file name to download. Type in (for this example) '64COL.TSX' (ENTER).
11. The next prompt will ask for a transfer protocol presenting different choices. Choose the number corresponding to XMODEM. After a slight pause, the transfer statistics will be presented (ie. number of blocks, send time etc.).
12. At this point, exit the terminal mode and go back into the Data Buffer menu. Choose "X" for Xmodem receive. After a momentary delay as the two computers attempt to synchronize, you should see your buffer open, and the words "Receiving Block 1" at the bottom of the screen. After another short pause, the BUFFER USED figure will increment from 0 to 128 (very quickly), after which it will update and say "Receiving Block 2" etc. This process will continue until the entire file has been transmitted. This feedback, in my opinion is the NICEST feedback I've seen from the various T/S Xmodem programs tested. Unfortunately, the program is not without bugs (see the product review section). At the completion of the file transfer, you will see the BUFFER CLOSED message appear and you'll be returned to the terminal mode.
13. Save and verify the program in the normal way.

G. XMODEM FILE TRANSFER W/MODEM753 (MENU DRIVEN SYSTEM)

1. Put the RPM Boot Disk into Drive A of your AERCO system and power up. Wait for the "A>" prompt.
2. Type in "Modem753" (ENTER) — make sure that program disk is in drive A.
3. When asked for the speed of the modem, word length, number of stop bits and parity enter the appropriate values (eg. 300,8,1,N).
4. Put a fresh, formatted disk into drive B (if you have a two drive system).
5. We'll logon onto Bill's Obsession BBS once again for this example. After the logon procedure type "F" for the files section.
6. Once at the files menu, type "L;2 for the AERCO RP/M files. Find an appropriate file to download (ie. XDRIVE.LBR). (Note: the extension .LBR indicates this a library type file which in fact contains more than one file bundled together. To extract the files contained within a library file requires a separate utility program to accomplish this and is beyond the scope of this guide. The user should refer to either HELP files on the BBS or books on CP/M for more detailed information).
7. Choose "D" from the files menu to download. For the protocol, choose the XMODEM option.
8. Enter the filename when prompted to (eg. XDRIVE.LBR (ENTER)).
9. The file transfer statistics will then be displayed and an indication that the file is ready to be sent.
10. Now, type in "E" to exit the terminal mode and go back to the main Modem753 menu.
11. At this point, type in "RT B:XDRIVE.LBR" (ENTER). The "T" after the "R" will automatically put you back into the terminal mode after the download process. The "B:" indicates to save the incoming program to the "B" drive.
12. After typing in the above, you should begin to see a series of numbers appear on your screen (in HEX) which represent each 128 byte block of characters being sent. As with all Xmodem programs, the host computer will "open" and "close" the buffer. After all the blocks have been sent, the host will "close" your buffer and you will automatically be returned to the Terminal mode.
13. Logoff at this time (type "G" (ENTER)).
14. Use CTL E to exit the terminal mode, then type "DSC" (ENTER) to disconnect from the TS 2050 modem.

Easy stuff isn't it ?

Ho, efully, these short examples will give you some flavor of what's involved in downloading a program. The procedures are very simple in practice. Remember, most BBS' will have good HELP files which thoroughly explain to procedures used to download a file from their particular systems. When in doubt most Sysops will be glad to offer some assistance in this area.

UPLOADING FILES

Were it not for those who uploaded programs to the various BBS' that support T/S computers, there would BE nothing to downloadl It is part and parcel of downloading that they should also upload. The process is not very difficult, and if you have Xmodem and a 1200 baud modem or PC – Pursuit, it doesn't have to be expensive either. If you lack all the above, the last resort could be to send a tape containing the files you wish to contribute to the Sysop. This method costs very little, and my experience shows that (even though it is a greater hassle for them) they usually appreciate the new program.

The process of uploading works very much like downloading with the possible exceptions:

1) On an RCPM based system, instead of typing XMODEM (or KMD) S Filename, you would type XMODEM R Filename instead. (The "R" for receive a program from you to the BBS substitutes for "S").
2) On most systems, once you have uploaded a program, you will be asked to provide a short description of what the file is all about. Among the items which should be included in this description is the type of computer the program will run on, what type of program it is (ie. BASIC, MC, or DOCumentation), and finally a brief explanation of the what the program does. If the program really requires an explanation that won't fit in a couple of lines, then by all means, PLEASE INCLUDE a DOCumentation file to accompany it. The way the program should run may seem obvious to you, but put yourself in the place of another user who has never seen the program before. Browse thru some of the directories and you'll find many programs have a separate .DOC file that accompanies them. Believe me, the extra time it takes to write a short description of how the program works will benefit all who decide to download and use it.
3) Probably the biggest difference which exists is how to get the program into your buffer in order to be able to upload it. This process will vary depending on the terminal program that you use. For example, for Mterm II users, loading a BASIC program into the buffer is no problem at all. Simply exit into BASIC and load the program in the normal way. However, if the desired program is a machine code or text file (which exists as a "byte" file), then loading it into the buffer is a bit more tricky. The problem arises in that when you load the program, the information contained in the leading "header" tells the computer what memory address to load the program from. Unfortunately, in most cases, this address is not the same as the starting address of Mterm's buffer. One method of overcoming this problem is to use a program such as Loader V. This excellent utility program will allow you to load ANY machine code program, text file or screen string into Mterm's buffer easily. For those who use the terminal program Specterm 64, things are a bit easier. Specterm requires no extra utility to accomplish this task. In the Command mode, simply choose "L" and then start your tape. Specterm will take whatever is on the tape whether it be a machine code, Tasword 2 file, screen string etc., and place it in memory (including the header information as weill). With the new TS 2068 version of Specterm, TS 2068 programs can now be loaded as well (note: the original version of Specterm 64 operated only a Spectrum emulated TS 2068).

While time and space do not allow specific examples on how to upload files to each specific BBS you may try, fortunately those system HELP files can be accessed anytime while online. There, you will find specific instructions on how to upload to the BBS. One other note of importance, REMEMBER the programs you upload should be of the PUBLIC DOMAIN type. Uploading copyrighted or commercial programs is strictly prohibited and could get the Sysop of the BBS in deep trouble!

INTERPRETING FILENAMES

In general, file names actually consist of two components – the file name itself and a file extension. By convention, the file name is an abbreviation providing a faint clue of what the file is (eg. RLEPRO clues us that this file concerns the subject of RLE graphics or something similar). The extension (ie. the letters that appear to the right of the ".") are included to indicate the type of file the program represents (eg. ".TXT" indicates that the program is an ASCII text file of some sort). However, it is the extension that varies so much from board to board. Unfortunately, no standardization exists today for Timex files across the different BBS'. Although some Sysops have adopted conventions to be used for files uploaded to their specific boards, you will find others who use completely different standards.

So, not by choice mind you, I have included the different extensions you may encounter on some of the more prominent Timex boards you may call.

THE TIMEX EXCHANGE

.LST is an ASCII program listing. You can D/L it using ASCII transfer or view it thru "TYPE".
.TXT is an ASCII text file. Can be D/L using ASCII, HEX or XMODEM transfer.
.DOC is an ASCII documentation file which accompanies a program file.
.TS is a Basic program uploaded in Mterm II HEX.
.TS1 is a Basic program for the TS 1000/1500 uploaded using Mini-Xmod.
.TSX is a TS2068 program uploaded in Casby TSXmodem (Loader V). Can also be D/L using Specterm 64 or Zterm 64. With the former, a special utility to add a header to the file must be used (eg. SP64FEX.SPX).
.SPX is a Specterm 64 program. This file also includes the header (as opposed to a TSX file which does not). You could D/L this type of file with Casby TSXmodem and delete the first 32 bytes. However, no guarantees this will always work.
.RLE is an RLE graphics file. Any terminal program with Xmodem capability can be used to D/L this file (including QLTERM).
.SCS is simply a screen string file.

BILL'S OBSESSION BBS

.HEX is a TS2068 file uploaded in HEX using Mterm II.
.TXT is an ASCII text file.
.TSX is a TS2068 file uploaded using Casby TSXmodem (Loader V). Can also D/L using Zterm 64 (see above).
.SPX is a Spectrum or TS 2068 file uploaded using Specterm 64 Xmodem.
.DOC is an ASCII documentation file which accompanies a program.

F.W.K.U.G. BBS

.TS is a TS2068 program uploaded using Loader V Casby TSXmodem.
.TXT is an ASCII text or documentation file.
.SPX is a Specterm 64 program uploaded using Specterm 64 Xmodem.

NIGHT OWL SPECIAL BBS

.TS1000 is a TS1000 program uploaded using Mini-Xmod Xmodem protocol.
.TSX is a TS2068 program uploaded using Casby Loader V TSXmodem.
.DOC is an ASCII documentation file uploaded with Loader V (cannot D/L using ASCII)
.S is a serial file (text only) uploaded using Loader V.
.P is a TS2068 program uploaded using Loader V.

OWEGO FREE ACADEMY

.BTS is an ASCII file, program or a text file.
.LST is a program listing in ASCII format.
.BAS is a TS2068 program uploaded using Loader V.
.DOC is a standard documentation file in ASCII format

LT - BBS

.HEX is a TS2068 program uploaded using Mterm II HEX
.TSX is a TS2068 program uploaded using Casby TSXmodem
.XM is a TS2068 program uploaded using Xmodem
.BAS is TS2068 Basic program uploaded using Mterm II HEX
.DOC is a documenation file in ASCII format
.TXT is a text file in ASCII format

BELDEN HILL BBS

.BAS is a BASIC program for the TS2068 uploaded using Xmodem
.TXT is a text file in ASCII format
.BYT is a binary file uploaded using Xmodem
.DOC is a documentation file in ASCII format

COMPUSERVE, originally had no standard file extension conventions either. You will still find some of the older uploaded files have no extension at all! Recently, however a standardization has been followed by the those who upload files to the Timex Download Library. For example, files uploaded using Xmodem protocol (via Casby TSXmodem or Specterm 64 or Zterm) have an extension of .XMD. Files uploaded using Mterm HEX have the extension .HEX adjacent to the file name. The text and documentation files will have .TXT or .DOC next to the file names. When in doubt about what a particular file is all about, use the BROWSE command at the I prompt (eg: BRO filename.ext). This may also provide some clue on how the file was originally uploaded.

Finally, some boards as mentioned earlier provide uploading and downloading through menu driven BBS systems. In most cases, extensions to file names are not even provided. Fortunately, a short file description usually accompanies each file name. By reading the description, an indication is sometimes given as to what transfer protocol should be used to download the file. Boards which you will find these types of files include The TSU and SERIAL PORT BBS's.

RLE GRAPHICS

For those of you unfamiliar with RLE graphics, the term "RLE" (run–length–encoding) is a process of converting a 256 X 192 pixel screen image into a string of ASCII characters. Each RLE file follows a standardized format (ie. standard header and footer with continuous pairs of ASCII characters in between). Because a standardized format is used, graphical pictures generated on basically any computer which supports high resolution graphics can be viewed on different systems. This is also true for the TS 2068! Imagine, being able to view a high resolution drawing created on an Amiga, Apple, Atari or IBM on your very own TS 2068. Well, it's certainly achievable, thanks to the efforts of John Ryan.

It was on Compuserve that I first encountered the term "RLE GRAPHICS." John Ryan, a frequent visitor to the Timex SIG on Compuserve first announced that there was a Picture Support forum available on Compuserve which contained high resolution "RLE" type pictures. Furthermore, John had written a BASIC program which could be used to decode a downloaded picture file for viewing on a TS 2068. The original program entitled "RLEPRO.TS (HEX Transfer) and RLEPRO.STX (Xmodem Transfer) are still available in the Timex Data Library (note: In addition, John also wrote a program to convert a graphic picture created on a TS 2068 into RLE format; this file can also be found in the Timex Data Library on Compuserve – RLEUPL.XM8, RLEUPL.TXT).

Well, having read this message, it immediately captured my curiosity and I soon found my way to the Picture Support Forum and downloaded an RLE file. Next, I downloaded John's decoder program. John recommend to compile the BASIC program before attempting to decode a picture file as the time to decode a complete picture could be quite lengthy. Not having a compiler at the time, I took the chance to run it from BASIC. Well, John was right! For 20 minutes I watched what at first appeared to be line after line of black and white pixels. Suddenly, as the last few lines were drawn, it was CHRISTY BRINKLEY full screen right before my eyes (oh, and what eyes)! My first reaction was nothing short of FANTASTIC!!

Since that time, significant improvements to John's original decoding program (through the efforts of several different individuals) have appeared. The enhanced versions include machine code adaptations (converts a picture file in less than 30 seconds!), print screen options and save to tape features. Also, several sources of RLE picture have been identified. Although, the majority of these are available only on Compuserve, I have noticed several RLE files being uploaded to other BBS's as well. QL users haven't been left out either. Thanks to Norm Lehfeldt a QL RLE decoding program exists (see Appendix for the QL program listing and Norm's comments on RLE graphics).

PROGRAM NAME	AUTHOR	SOURCE
RLEPRO.TS and RLEPRO.STX RLEUPL.TXT and RLEUP.XM8	John Ryan	COMPUSERVE, Timex Exchange BBS, FWKUG BB
RLEMASTR Series (includes TS2068, Spectrum Versions)	Mike DiRienzo	Timex Exchange BBS
QRL (For TS2068 & Spectrum)	Jack Dohany	Mail Order (see Appendix for Address)
RLE BASIC and COMPILED	Stan Lemke	TIME DESIGNS ARTICLE (Jan Feb 87)

Sources of RLE picture files include (all found on COMPUSERVE): Picture Support Forum (GO PICS), FBI 10 most wanted list (GO FBI), Citizens Band Interest Group (GO CBIG), Art Gallery, Hollywood Hotline (GO HHL), the Broadcast Professional Forum (GO BPFORUM), Sailing Forum (GO SAILING). BBS' also having RLE files include: Timex Exchange, FWKUG BBS, Bill's Obsession BBS.

7
Product Reviews

THE MODEMS

For a time, those of us who owned a TS 2068 or TS 1000/1500 HAD no means of telecommunicating with the rest of the world. Finally, Byte-Back introduced a modem for the T/S line of computers. Shortly after that, Westridge decided to go ahead with the introduction of the 2050 modem. However, recent developments in the area of Timex Telecommunications have made it possible for us to use any standard 300/1200 baud RS232C modem. The following products are reviewed below:

ZX-81/TS 1000/TS 1500 MODEMS

1. Westridge 2050
2. Byte-Back MD-2

TS 2068

1. Westridge 2050
2. Byte Back MD68
3. Avatex 1200 using the Z-SI/O Board

ZX-81/TS 1000/TS 1500 MODEMS

A. Westridge 2050

Features direct connect (through the 56 pin expansion buss) to the computer. External power supply required. One front panel LED is used to indicate a "Connection" has been made. Comes with Aterm I terminal software (see Software Review section). Using a supplemental program (Mini -Xmod), the modem can be used to upload/download programs using Xmodem protocol. Articles have appeared which allow the 2050 circuit board to be modified into a standard RS232 board (refer to the Appendix). Since it has been out of production for some time, Westridge provides no after sales support.

B. Byte Back MD-2

Features direct connection to the computer. Power is drawn from the computer. No LED display to indicate current mode. Comes with Z-Com terminal software. Terminal software lacks autodial and auto answer capability. Uploading and downloading provided, however the protocol used is non-standard and specific to the modem. A version of Mini Xmod is available for this modem which allows Xmodem file transfer capability. After sales support IS provided by the manufacturer. The modem also features a socket to which an RS232 connector could be attached. This can enable a serial printer, plotter etc. to be connected. The modem is limited to 300 baud transmission and is configured to mimic a Bell 103 standard FSK set-up. The RS232 connector does have the capability of up to 9600 BPS (Note: A hardware modification is required to do this however). It should also be noted that the terminal software CANNOT be loaded without the modem in place. The correct steps once the modem is attached is - 1)Turn on the computer, 2) Turn on the modem, and 3) Load the terminal software.

TS 2068 MODEMS

A. Westridge 2050

The same modem which can be used on the TS 1000/TS 1500 also can be used on the TS 2068. Basically, the same hardware features described above apply here as well. An enhanced version of the terminal software (Mterm II) can be purchased to take advantages of the TS 2068 color, sound, and extra memory. Other terminal software packages have also been developed to work with the 2050 modem (eg. Zterm 64 & Specterm 64). A valuable supplement to the Mterm II software is Kurt Casby's Loader V program (see software review section for details).

B. Byte Back MD-68

The MD -68 is the TS 2068 version modem. This modem features direct connection to the computer and requires a separate power supply. Spectraterm 1.3 terminal software comes with the modem. In conjunction with the terminal program, the modem also features auto answer but still lacks autodialing capability. No front panel LED to indicate current connection status. A 9 page manual accompanies each modem and contains schematics and parts list. As mentioned above, product support is provided by the manufacturer. The modem also has the RS232 connector (similar to the MD-2 model). The buffer area has 32K + available storage.

C. Avatex 1200 Modem used with the G & C Z SI/O Card

The Avatex 1200 is a standard RS232 connect modem. The features include autodial, auto answer, separate power supply and several front panel LED display lights which indicate connect mode, power status, transmission status, receiving status etc. The modem features both 300 and 1200 baud selection (there is a push-button switch located on the front panel to toggle between the two modes). A convenient ON/OFF switch is also located adjacent to the speed selector switch. Each modem comes with a full 2 year warranty from the manufacturer. The modem is actually available in two different models -- a "mostly" Hayes compatible and a 100% Hayes compatible version (1200HC) In order to use this (or any standard RS232 modem) with the TS 2068 requires an additional RS232 interface card. The two known to us are the G & C Z SI/O card or the AERCO RS232 card. The Byte Back RS232 interface will not work, A fully documented users manual comes with each modem. With the 1200HC model, a free introductory pass to Compuserve is also included. Price differences between non Hayes and 100% Hayes compatible models is 30-45 dollars.

TERMINAL SOFTWARE

One advantage other computer owners had over the T/S community was availability of different communication software for their systems. However, the time has arrived for the T/S followers. A host of different terminal programs have appeared on the market each offering some outstanding features. Revealed below are no less than eleven terminal programs designed to work specifically with the TS 1000/1500, 2068 or C computers (imagine all this occurred after the great "pullout" by Timex)!

TS 1000/1500 TERMINAL SOFTWARE

A. Z COM

Two version of Z-Com exist , one for the unexpanded 2K TS 1000 and one for a 16 64K TS 1000 with additional RAM pack. The latter has the capability of saving up to 60 screens of text with the attachment of a 64 Ram pack. Although the program does allow for uploading and downloading of files, the format is non-standard and program specific. Z-Com files are available on Compuserve (are only knowledge of Z-Com transfered files). Also possesses limited continuous printout function (supports both the TS 2040 or Standard 80 column printer). Comes with a 12 -page manual and product support is still provided by Byte Back

B. ATERM I

This program accompanies the purchase of the original Westridge TS 2050 modem Both a TS 1000 and TS 2068 version is supplied on the same tape. The program provides the basic function of a terminal program. No file transfer protocol is included. Parameters which can be altered include, data bits, stop bits, parity etc. Only 300 baud capability, but does have autodial (no dialing directory though), auto answer and a print screen option to a TS 2040 printer. A printer patch has been written to enable a full size printer to be used as well

C. MINI-XMOD

This terminal program for the TS 1000/1500/ZX81 is available for both the Westridge 2050 and Byte Back modems. Two versions come on each tape, one for a 16K and another for the 64K Ram Pack additions. As a straight terminal program, it is very user "unfriendly" and difficult to operate. The major feature provided is an Xmodem transfer protocol which works well and easy. For this reason, anyone with the above computers wishing to download or upload files should have this program.

TS 2068 TERMINAL SOFTWARE

A. MTERM II

Mterm II adds many enhancements to the Aterm I terminal program. Included are such features as autodial (with a 14 directory phone list), auto answer, capability of defining up to 10 macro keys (each can be up to 53 characters), and includes a buffer of approximately 27+K. Capable of downloading/uploading using non-error checking ASCII, HEX or REM conversions. Online continous printing to a TS 2040 provided, however printer patches to Tasman or AERCO interfaces are available which enable printouts to full size printers. Long considered to be the one and only terminal software to use, it has served as a model for comparison to the newer programs on the market. Those who have tried to modify it (Mterm is entirely in machine code) say that it is very difficult to follow. Although it comes with a users manual, documentation on many of the features is lacking. Another supplementary manual written by Barry Carter is available which fills this void (See vendors appendix).

SOME ADDITIONAL NOTES ON MTERM II

The widespread popularity of this software has led us to include some additional information. No program in T/S computing has gotten as much attention and/or modification as this one. MTERM II is the second generation of MTERM I. Unfortunately, on the printed matter, Westridge made no differentiation. If the original Westridge tape you have as different programs on each side you have MTERM I, if not, you have MTERM II.

The program itself is fairly straight forward and easy to use. This is a lucky break, since the manual leaves much to be desired. As mentioned elsewhere the best reference on MTERM is Barry Carter's guide (See Appendix), also of help are the docs from Loader V which give a memory map of MTERM. Additional articles have appeared in magasines & User Group Newsletters (see Appendix).

By the way, neither Westridge Communications nor Micro Systems support this software at this point. Zebra Systems own the rights to it.

MTERM II is entirely in Machine Code, and starts at address 54016. The program itself is 7721 bytes long, so to make a backup of MTERM II alone:

SAVE "MTERM" CODE 54016,7721 <enter>

However, if you'd like to save the dialing directory and MACRO keys as you have modified them, then:

SAVE "MTERM" CODE 54016,9216 <enter>

Or, you could save the dialing directories as seperate files, such as:

SAVE "LOCAL1DD" CODE 61737,1495 <enter>

Thereby you could have any number of dialing directories saved to tape or disk. From Dave Rothman comes this:If you Escape to Basic and return to Mterm using PRINT USR 54016, you will lose the Macros and dialing directory. To avoid this, use PRINT USR 54079 instead.

The buffer for this program sits lower in memory, occupying the normal BASIC area, starting at 26710. Technically, it's 27,256 bytes long, but if you fill it completely, you may be sorry. Sinc the buffer does start at the normal BASIC location, LOADing and SAVEing of BASIC programs can be accomplished in exactly the same way as any other LOAD or SAVE. But Machine Code, or "BYTES" files, are a different story. See descriptions of Utilities below for the solutions to this dilemma.

There are an AMAZING number of utility programs written to augment the capabilities of MTERM II over the years. Here is a partial list:

1) MTERM/AERCO patch- (also called MT-AERCO) this allows you to PRINT to an 80 col printer using the AERCO Centronic Printer Interface. It's written by Dave Schoenwetter, and is in the Public Domain.
2) LOADER V- allows you to load any "BYTES" file into the MTERM buffer, be it program, SCREEN$ or text, includes Autodialer. By Kurt Casby, a Commercial program
3) TSXMODEM- gives you Xmodem protocol for Uploading/Downloading of software By Kurt Casby, Commercial Program.
4) TASTERM- Modifies Tasword 2 to allow you to load a text file captured in Mterm II's buffer for viewing/editing. By David Pranitis , Public Domain

5) LETTERITER/BUFFERITER- allows you to "write" a letter or post and load it into MTERM's buffer or modify an existing buffer save. By Rick Conard, Public Dom.
6) SEND-VARS- allows you to send a BASIC program with variables or M.Code. Originally intended to work with HEX protocol, but works also with Xmodem. By David Hosher, Public Domain.
7) UNLOADER- allows you to take an MTERM buffer or MSCRIPT file and break it up into useable Tasword2 files. By Kurt Casby, Public Domain.
8) WIESER BUFFER UTILITY-includes the Mterm/AERCO printer patch (#1 above) and adds the FASTDIAL utility (Below) also allows "typing into" the buffer. See more details below. By Rebecca Weiser, Public Domain.
9) CODE X-allows sending of Machine Code programs, by Jim Showalter, Public Domain.
10) SCREEN X-allows sending of SCREEN$'s, by Jim Showalter,Public Domain.
11) RELOADER- Requires code of LOADER V, allows you to "Reload" buffer with any Machine Code file while still online. By Kurt Casby, Commercial
12) BASIC2text-Converts any 2068 BASIC program to an ASCII file so that you can Upload it for users of other computer types. By Michael Carver, Published in NOV, DEC "TIME DESIGNS MAGAZINE".
13) FASTDIAL- an Autodialer which first appeared on Micro-Systems BBS in FL Author Unknown, Public Domain.
14) HAMMERDIAL- autodialer by Randy & Lucy Gordon, Public Domain.

The MTERM/AERCO patch was written by Dave Schoenwetter and was originally published in the SINCUS NEWS. However several versions now exist. It is loaded as a "BYTES" file and is always in the computer when MTERM is there. It allows you to print continuously while MTERM is running, to any 80 Col printer that normally works with the AERCO Centronics Printer Interface (or the John Oliger version of the same interface) Many people have asked Dave to make revisions for THEIR particular hardware setup. Dave no longer owns a 2068, since he "fried" his last one, and now works exclusively with the 1000. Those of us who've used his programs are very thankful for his contribution.

LOADER V is the last generation of a series of programs which allows you to load ANY file, Binary, text, BASIC variable, or SCREEN$ into MTERM's buffer. This is, by far, the easiest and most powerful "Loader"-type utility for MTERM. Although it comes with several other programs, Loader V itself has both a BASIC and Machine code component. Once you've loaded the buffer with a file, you've lost the BASIC component. If you've finished Uploading and Logged Off, then simply re-load the BASIC part of Loader V. If you're still Online and wish to make successive Uploads, then use RELOADER since it won't disconnect you.

This program also includes an auto-dialer with dialing directory that allows the storage of 21 numbers, along with MTERM's 14, you could then have a total of 35 numbers in memory. Of all the auto-dialers so far available, this is by far the best. It is very fast , at least 2 or 3 times faster than FASTDIAL and accurate. Kurt also gives good documentation on how to modify the dialer. In Fact, all the LOADER V docs are excellent.

TSXmodem. They use the word "elegant" in Mathematics to describe an equation which has been reduced to absolute simplicity, yet complete. It is a thing HARD to achieve. TSXmodem is an "elegant" equation. Only 537 bytes long, probably the most remarkable 537 bytes written for the 2068 in a LONG time. Essentailly, it allows uploads and downloads in xmodem protocol. This is a "Relaxed" xmodem which works fine on PCPursuit. It gives good feedback on the download in progress. It comes as part of the Loader V package.

TASTERM. This is a modification to Tasword2 which allows you to import and export MTERM2 buffers. You need to own Tasword2 first, then alter it as per instructions (see appendix).

LETTERITER/BUFFERITER is a commercial program which has been reviewed at least twice in the T/S press. It isn't quite a Word Processor, more like an "editor". It's beauty lies in the fact that it's output is fully compatible with MTERM's buffer. Likewise, any MTERM buffer could be put into it for modification.

SEND-VARS-An early attempt to send BASIC variables and Machine code via MTERM. It works in Timex mode, not Spectrum mode. It takes the machine code and creates a dimensioned string variable. David Hoshor (the author) describes this program, and so sheds light on MTERM itself:

"The MTERM program determines the buffer space used by subtracting the value contained in the system variable PROG from the system variable VARS. VARS contains the address at which the BASIC variables begin; PROM contains the address at which BASIC begins. If you want to send variables or machine code, you have to find a way to trick the 2068 into thinking that the variables are part of the BASIC section of the program. I did this by writing a program that raises the value of VARS up to that of E_LINE and saving the former value of VARS so that it can be restored by the receiving party when the program is received. E_LINE is the last byte of the BASIC program and variables area."

"The program SEND-VARS will send machine code by putting the machine code into a dimensioned string variable. This, of course, is a variable and can therefore be sent by SEND-VARS." David Hoshor.

UNLOADER allows you to load in an MTERM buffer, and save it to tape (or disk if you modify the BASIC) in a Tasword2 format, which you could then edit and/or print to an 80 Col. printer. Very handy and in the public domain.

WEISER BUFFER UTILITY This program is based in large part on previous work, yet still breaks new ground. It uses both the Schoenwetter printer patch and the FASTDIAL program from Micro-Systems BBS, as well as several added functions. A) You can "type" right into the buffer, B) you can set the autodialer to dial more than one number repeatedly (as many as you like), and C) it repositions the PROG variable so that this program is constant in memory (i.e. dosen't get erased when you "Clear" the buffer. So you have a permanent BASIC program. See the print-out in Appendix for instructions on inputting and running this program.

CODE-X. Recently released by Jim Schwalter, this is a public domain program for putting a M.Code program into MTERM's buffer. (we were not able to test it), comes with documentation, available on TSU BBS.

SCREEN-X also a recent release, this is a P.D. program for putting a 2068 SCREEN$ into your buffer. Also comes with documentation, available on TSU BBS.

RELOADER allows you to reload as many M.Code programs as you like in succession (for the purpose of Uploading).It differs from the Loader V itself in that it has no autodialer and the Loader V will hang up the modem if you load it while online. You must have used the Loader V program initially as this one depends of the Loader V M.Code.

BASIC2text this has been a long needed program. It allows you, the dedicated T/S BASIC programmer, to share your hard efforts with users of other computers. This program will AUTOMATICALLY convert a standard 2068 BASIC program to an ASCII file that you can Upload. Once this ASCII file is Uploaded, the receiver will probably have to do some conversion to make it run on their computer, but at least they'll be ABLE to, whereas before this came along, it would have been downright impossible. Published in Nov/Dec 86 TIME DESIGNS , written by Michael Carver, and available from the author for $4.

B. SPECTRATERM 1.3 (BYTE BACK MD-68)

Specific for the Byte Back MD-68 modem, this terminal program features 300 baud rate, a 32K+ buffer (allows storage of data in REM statements only), auto answer. The program lacks autodialing capability, and uploading/downloading of files is also limited to "REM" statements. It is possible to toggle the buffer, alter the communication settings, and save/load to the buffer while online. The program supports printouts to a TS 2040 printer or through an 80 column full size printer. The software cannot be loaded without the modem in place, but buffer saves CAN be read without the terminal program as these exist as regular "REM" statements. You must take care in not opening the buffer before a connection is established, or leave the buffer open after disconnection for fear of possible corruption of the data. Includes a fairly complete 6 page manual. Product support is provided by the manufacturer.

C. ZTERM64 (FOR THE WESTRIDGE 2050) also requires OS-64 Cartridge

ZTERM64 is a terminal program produced by Zebra Systems for the Westridge 2050 modem. Zebra had the advantage of having Mterm II as a basis to start with. The program also includes several enhancements. A full 64 column screen is implemented, however as mentioned in the title the Zebra OS-64 cartridge board is a requirement. Other features include Xmodem transfer protocol, a built-in 80 column printer driver (supports AERCO, TASMAN and A & J printer interfaces), and built-in configuration for the Zebra FDD disk drives and A & J Microdrives. One of the best features is a continuous ONLINE READOUT of all communication parameters including the buffer (this is the author's favorite !). The software is more user-friendly than Mterm II (eg. no abbreviations are used in the menus, rather items are spelled out). Commands used are very similar to Mterm II, so if you're familiar with that program, learning to use Zterm is relatively easy. Comes with a fully documented 24 page manual.

With all these outstanding features, Zterm is not without its share of problems. Dave Rothman (Co-Sysop on the Timex SIG, Compuserve) has documented the problems he has encountered with the program. "The upload and download portions are the weakest parts of the program. The direct Xmodem to disk functions, but leaves the file in a format that will not reload into the TS 2068. As it is, this function is only useful for text files! The normal Xmodem into RAM does not set the end of the program pointer correctly. It leaves the SYSTEM variable VARS pointing to the end of the last 128 byte block. Not the END of the PROGRAM!!! The normal non protocal uploads in conversions to HEX don't work at all." (Editor's note: to date, there has not been any corrections made to the Zterm64 software by Zebra Systems).

D. SPECTERM 64

This terminal program first appeared in the U.K. where it was widely used on the Spectrum. G & C computer products obtained the U.S rights to market it domestically. The original version could only be used with a Spectrum "emulated" TS 2068 (eg. via Romswitch, Omni Emu etc.), however just recently, a true TS 2068 version is now available. One of the major features Specterm offers is Xmodem transfer protocol and 300/1200 baud communication. (note: the 1200 baud capability is made possible with the additional Z-SI/O RS 232 card also marketed by the above – see hardware reviews for a description). The open end architecture design of the program makes it very versatile to customize to suit your specific requirements. For example, it can be modified to work with any variety of different modems through the use of "Overlays." An overlay is provided to work with the Westridge 2050 modem. The program produces 64 columns screen display WITHOUT the need for additional hardware! The Spectrum version features a 31K+ buffer (the TS 2068 version slightly less). The buffer can be toggled on/off while in the terminal mode, however to view it requires you to exit into BASIC. There are no MACROS, but the program does allow for sending all control codes while in the terminal mode. Includes a 10 page manual. G & C offer full product support (in fact, online support is available on the Timex Exchange BBS).

D. SPECTERM-64 V 4.0 & 4.1 (Revised Review)

This program first appeared as a commercial program in England where it is widely used on the Spectrum. Grey & Clifford Computer Products obtained the rights to sell it in the U.S. as modified for the 2068. Version 4.0 ran only in Spectrum mode. There are both Spectrum & 2068 versions of version 4.1. (NOTE: I originally reviewed this software in Ver. 1.0 of "The T/S Guide to Telecommunications". Much of that review proved erroneous. Please read the following carefully.)

The Big news here is Telecommunications at 1200 B.P.S. on the 2068. This is the ONLY way to achieve that speed on this computer. How can I describe 1200 BPS? Well, let me put it this way: If you bought a magazine and could only look at 10 square inches at a time and had to read the ENTIRE MAGAZINE in sequence- that's 300 BPS. But 1200 is like skipping through till you find the part you want, and THEN stopping to read. It's much more satisfying and efficient. It also puts Long Distance telecommunications in a "whole other dimension". As I mentioned elsewhere, an xmodem transfer at 1200 BPS takes ONE EIGHTH the time of a HEX transfer at 300 BPS; with the additional benefit that it's error-free. Once you begin serious downloading, you will truely appreciate this! The second big feature of this software is its versatility which is manifest in a block of 7K designated as a permanent BASIC component. That is, permanent all the time you're online, it dosen't get erased like the buffer in MTERM. However you can easily change it by loading a different version. What good is that block of memory? Well one MAJOR use is to interface the program to YOUR mass storage, WHATEVER that may be:Microdrive, Disk Drive or Ramdisk (coming soon). The next major use is to interface a WIDE range of modems which is particularly easy with the use of the Z-SI/O Card, but also possible through other RS-232 interfaces.

What else? Well there have been a wide variety of utilities written for MTERM, over the years, all squeezed into small blocks of memory left over by accident. The 7K Block of the Specterm software is a LARGE BLOCK by comparison. In it you could easily put printer drivers or auto-save routines or a number of other utilities all at the same time! Those routines used to I/F the mass storage and modems are called OVERLAYS, and were developed long ago by CP/M programmers to allow easy modification of a program without divulging the SOURCE CODE. When you buy Specterm-64, what you're buying is the CODE. But packaged with it, as a convenience are some examples of these OVERLAYS. In my first review, I said, quite negatively, that you need to enter a long BASIC statement in order to check the buffer. That was ABSOLUTELY FALSE! You can simply incorporate this statement into the BASIC component, and thus easily check the buffer, simply by escaping to BASIC. In fact, this routine is provided in the stock tape as it comes from Grey & Clifford. I had simply failed to load that particular Overlay. This terminal generates 64 WITHOUT the use of the OS-64 cartridge. This in itself turns out to be a big feature. Nearly all BBS' are configured for 80 columns, and while it isn't perfect, 64 Col is MUCH closer. A monitor is pretty essential, one I bought for $30 worked great. The character set has been designed to add readability (better than Tasword, I think). Once you get used to 64 Col.,it's difficult to go back to 32 col. for terminal work. The 64 col DRAMATICALLY increases the amount of information on the screen at any one time. All too often, at 32 Col., by the time you get to the bottom of a menu, the top has scrolled off the screen. Then you have to work from memory. This NEVER happens with 64 Col. In addition, the ARRANGEMENT of the on the screen makes it easier to follow.

In my original review, I described the lack of 80 col. printing facility. Besides the potential to add one thru the 7K BASIC area, buffer saves are COMPLETELY Tasword compatible. Although they may be too long, it's easy to break them up with UNLOADER, then simply load the file into Tasword and print from there. Also, in my original review I stated that, upon downloading, it was impossible to tell if the transfer was successful or not. THAT WAS ALSO INCORRECT. The blinking "R" on the screen tells you it's a successful transfer. Another mistake I made in my first review was when I said, "If you forget the Caps-lock and enter a lower case letter in command mode.... you must then reboot the program." Not true at all! If you make the above error, it will simply refuse the command until you use a capitol letter. It will lock up and need rebooting if you go offline (using the 2050 modem) and fail to immediately escape to BASIC. However, once you understand this, there's no problem.

Since my original review, I've put this program through a great deal of testing-spending hours and hours online & making over 100 downloads and uploads of all descriptions. I moved AMIGA files, MAC files,IBM files, text files & Etc. It worked beautifully. There WERE failures but none I couldn't eventually trace to operator error or host error. The trick to moving files of foreign computers is this: don't SAVE/LOAD it. Call board A D/L a file, disconnect, call board B and U/L. As I said, I did this MANY times with great success. One feature I grew to like more and more was the speed of the keyboard. The Keyboard scan routine on MTERM is a very slow one. Put mildly, it's a PAIN. I can, and frequently do, out-type it. But the joy of the Specterm is that I can type MUCH much faster. This is great on L.D. calls! Specterm also gives you "audio feedback" for each keypress. I really missed it when I went back to other terms. My experience showed that Ver. 4.0 was a bit TOO fast, but both versions of 4.1 are adjustable, so you can select the speed you want. The new version also allows for color control of the screen. One of the best things about this program is the certainty of future support. You will be hard pressed to find any two people who are more knowledgeable or have done more for T/S Telecommunications than Ed Grey and Dave Clifford. Their support is available both by voice and by data, the latter in the form of the TIME<X>CHANGE BBS. They and fellow users are currenly working on utilities & overlays to enhance the program which are available for download on the BBS free. So the big reasons for going to Specterm 64 are these: 1)1200 BPS communications, the ONLY way to do this w/2068, 2)Tremendous versatility in the form of a wide-open 7K BASIC Component thus enabling direct access to YOUR mass storage device and/or a wide variety of modems, 3)VERY active continued support for the system with new utilities & additions all the time-available on the TIME<X>CHANGE BBS, 4)The size of the buffer:31K+, 5)Better display & no need for the OS-64 cartridge, 6)Faster keyboard (The newest version lets you adjust), 7)Allows you to use nearly ANY RS-232 modem (the industry standard) when used with the Z-SI/O Card.

I HATE to see a good program maligned by poor reviewing and hope you will understand my error in rushing V 1.0 of The Guide to print. The main differences between version 4.0 and the two versions 4.1 (both Spectrum & TS 2068) are these. A)There is no 2068 version 4.0,only Spectrum, B) You can adjust the speed of the keyboard on 4.1 not on 4.0., C)The new version has a "relaxed" xmodem which works perfectly on PC Pursuit. D) You can change the screen color on Ver.4.1, you couldn't on 4.0. If you own 4.0 and want to upgrade to the SPECTRUM version of 4.1, it will cost you $5.00. If you want the 2068 version it will cost you $30 + $2 S&H. The program is available from RMG, Variety Sales or from Grey & Clifford Computer Products/POBox 2186/Inglewood, CA 90305, (213)759-7406

E. MODEM753 (USED WITH THE AERCO RP/M AND 2050 MODEM)

The original version Modem7 was first written by Ward Christensen in the 1970's. Since then, it has gone through numerous revisions by a number of authors. In an effort to provide a terminal program to work in conjunction with the AERCO RP/M operating system and the Westridge 2050 modem, AERCO modified Modem7 for this purpose. The earlier attempts resulted in several software bugs, especially in the area of Xmodem file transfer. Paul Erickson and Bret Lanius (Atlanta Timex User Group) further refined the program and corrected the Xmodem file transfer problem. The only problems still encountered in transferring files occurs on those host systems that are too fast for the program to keep up with.

The program itself features full 80 column screen displays (as generated by the AERCO RP/M operating system), auto dial which includes a dialing menu, but NO auto answer. File transfer occurs directly to disk. You can also "boot" the program off the "A" drive and set it to save the buffer or file transfers automatically onto drives "B" or "C" depending on your configuration. When downloading, a series of numbers appear on the screen which represent the Xmodem blocks transferred. There is still some problems with the program which I encountered testing it. The automatic save function did not work properly. The way it is designed to work is when the buffer is full (it has a 17K buffer area), it should automatically save the contents to disk – this did not occur for me. I have been advised to save it manually instead. In order to alleviate the problem of the host transmitting data too fast for the program to keep up with, if the host system offers you a choice of "NULLS" at the beginning of loggin ON, enter a number between 2–8.

F. LOADER V (USED IN CONJUCTION WITH MTERM II)

Although not strictly a terminal communications program, Loader V is an excellent utility program which is used specifically with Mterm II. The program adds several enhancing features not provided in the original program. These include: 1) Xmodem transfer protocol, 2) Auto - repeat phone dialer (great to use when the line is busy), 3) the ability to load MSCRIPT or Tasword 2 files directly into Mterm's buffer for transmission, 4) ability to load Mterm's buffer with any standard "bytes" file (idea for sending machine code programs), 5) expansion of the dialing directory with 20 additional slots, and 6) communication parameters can be set individually for each separate number.

The Loader V package actually is a series of programs all on one cassette tape. The Xmodem program loads separate from the main program. Also included is a program called "UNLOADER" which can be used to convert the contents of Mterm's buffer in a form suitable for editing/printing into Tasword 2 or MSCRIPT. Another nice program included is "RE-LOADER" which allows you to re-load the buffer while online! All in all, this represents an excellent enhancement to your telecommunications. Comes with a fully documented user manual.

QL TERMINAL SOFTWARE

A. QCODE

Written in the U.K., it also works here in the U.S. The program is compatible with the British "Viewdata" format as well as our "ASCII" type format domestically. Features include autodial, auto answer, a dialing menu capable of holding 32 numbers (each with 4 defineable MACROS), 300/600/1200/2400/4800/9600 baud rate capability. Overall the program is very slick and professional and very easy to use. The screen always displays the parameters at all times. Saving directly to microdrive or disk provided. In addition, screen width can be adjusted between 40/80 columns. However, downloading/uploading is only accomplished through non-error checking ASCII protocol, no Xmodem. When used here in the U.S. at 300 BPS, a product called "MODAPTOR" is required (not required if using a 1200 baud modem).

B. QL TERM

QL TERM is a public domain terminal program written in Superbasic by Rich Moldovan. It is a very simple program in design but does offer Xmodem transfer protocol capability. This is currently the only QL program which offers this for file transfers. The program lacks a capture buffer, however the author plans to add this feature in a later revision. When downloading, it transfers the file directly to microdrive (or disk drive is attached). There is one help screen in the software plus a documentation file to explain it. No continuous printout function available, however it uses Hayes compatible commands. Other features include autodial (including a dialing directory) but lacks auto answer. Both a BASIC and compiled version is available. The Basic version is available for download from the Compuserve QL data library. The compiled version can be obtained directly from the author by sending a formatted microdrive cartridge (refer to Appendix for address). (Editor's note: We have learned that Chris Raynak – Sysop of the TSU BBS has had good success using QLTERM on his BBS. He recommends the following: "compile the BASIC program using Supercharge Basic Compiler. Also, when logging on, if the host system gives you the option to enter the number of nulls, select a high number (on the TSU, enter 50). The download/upload works fine on the TSU and several files now exist in the QL data file library.) The compiled version can be obtained from Rich Moldovan by sending a formatted microdrive cartridge (plus return postage). There is also the capability of running at 1200 BPS!

AVAILABLE BBS SOFTWARE

During much of 1985, there was much interest in starting a BBS system using a TS 2068. Unfortunately, the lack of a standard mass storage device for the TS 2068 and appropriate BBS software hampered this effort. However, in early 1986, a BBS program called "Tinyboard" was released into public domain by Randy and Lucy Gordon (then of the Cinncinati T/S User Group). Their program was just the start of what would be a number of interesting and exciting projects which would ultimately result in a number of bulletin boards operating off a TS 2068 computer.

A. TINYBOARD SOFTWARE

The original Tinyboard BBS software program provided the ability of an unexpanded TS 2068 to serve as a host system. The program provided the "bare bones" essentials (no frills approach) to operate as a remote message base. The selections from the menu included (R)eading (S)canning, (W)riting messages, (C)hat with the sysop and (U)sers log. The public domain version of the program (which by the way is still available in the Compuserve Timex Data Library) was written entirely in BASIC. As a result, the program's execution speed was prohibitively SLOW!

However, since the release of the original version, several individuals have since made many modifications and improvements which have resulted in some fine "tuning" of the program. Among the first to set up a TS 2068 based BBS using the Tinyboard was Joe Newman (of Variety Sales). The intial setup was not crashproof as Joe would later say. Soon after, John Ryan modified the program which would allow it to function with the A & J Microdrives. After more modifications by Joe, he eventually had four separate message bases operating off of two microdrives! (Editor's note – As of this publication, the BBS is currently down due to a blown TS 2068. Joe has been working on a QL based BBS, so be on the lookout for this).

Some other innovators who have worked hard on upgrading the Tinyboard program are Paul Holmgren and Willie Jones of the Indiana Sinclair Timex User Group. They have developed their own unique TS 2068 I.S.T.U.G. BBS program which includes line printing of the caller log, a real time clock, and all operating totally off an unexpanded TS 2068 and Westridge 2050 (see chapter on bulletin boards for description). Willie Jones claims it is now 99.9% crash proof. It is still entirely in BASIC, but the improvement in speed execution is significant. (Editor's note - the current version of their program is for sale directly from the authors, see Appendix for address).

CASBOARD 2068

From the author (Kurt A. Casby) who brought us the Loader IV and V series of programs, has written a BBS program exclusively for the TS 2068. Designed as a "flexible" BBS program, it can be configured for use with any type of mass storage device (eg. cassette based, A & J mikrodrive, or disk drive setup).

The program comes on cassette and includes three versions: 1) Cassette based, 2) A & J Mikro – drive, 3) Zebra FDD disk drive. However, the program can be easily adapted to work with other disk drive systems such as the AERCO FD – 68. The only exception noted is the old Ramex Millenia K disk drive system. The cassette version maintains its entire message base in RAM and provides for approximately 40 screens of messages. This will vary depending on the length of each message. There is an auto scroll feature which deletes the oldest message as the board fills to capacity. In order to operate the cassette version, all one needs is an "unexpanded TS 2068, a TS 2050 modem and a cassette player."

Additional features can be taken advantage of if you use either mikrodrives or disk drives as the storage media. With either of these setups, MULTIPLE message bases are allowed. Also, uploading and downloading of files is provided for. File transfers can be made using ASCII, HEX, or Xmodem protocol. One nice feature of the program is that downloads are independent of how the file was originally uploaded. That is, something uploaded in HEX could be downloaded by someone else using Xmodem and vice versa.

Two of the boards mentioned in Chapter 3 currently operate using the Casboard program. Both sysops have commented that they are very pleased with the operation of the software thus far (see RMG BBS and Tyler Timex BBS descriptions in Chapter 3). We would anticipate many other people will consider setting up Timex based BBS' using this software. The author has hinted at a possible version two if enough feedback is provided. (Editor's Note – For those interested in a thorough review of the Casboard 2068 software, Mr. Charles Stelding, Sysop of the Tyler Timex BBS has written an article which appears in "THE DATA EXPANSION" newsletter. Contact: David Baulch, Editor, 4424 Geddes Ave., Ft. Worth, Texas, 76107).

SPIFFY BBS

As it was mentioned earlier (see the description of the Looney Bin BBS in Chapter 3), the Spiffy BBS was a program written by innovative Richard Kelsch in his efforts to setup a TS 2068 based BBS. The result was a slick, fast operating machine code program which operated off a TS 2068 and 512K ram board designed by the author himself. Although Richard also had A & J Mikrodrives, these were used only for the purpose of backing up messages. At the time, the software was written to provide for both uploading and downloading of files (but Richard lacked a disk system to implement this). Unfortunately, the Looney Bin's TS 2068 went down for repairs and has since been replaced with an Atari 512 based system.

Richard still plans on marketing the Spiffy BBS program however. In addition, some other exciting projects are on the horizon and include a RAM controller. The controller will give the capability of expanding the 2068's memory to 16 megabytes! It will accomplish this in 32K chunks. Individual memory boards will be the expansion to the controller with each board capable of 128K of static RAM. Also planned is a battery backup for the non volatile memory. So, keep your eyes open for these products in the future

ADDITIONAL NOTES ON CASBOARD 2068

We were able to test this software for about a month, not nearly long enough to give a complete accounting of it. But, for what they're worth, here are our observations. Our setup was the AERCO Disk Drive Interface, with only one DS/DD disk drive attached. The software comes ready to run on a Zebra FDD Disk Drive, but since all the access to disk are done in BASIC, it is easy to modify the program for the AERCO (or JLO, or probably the LARKEN). The patch used here was written by Charles Stelding who has had a Casboard up since the software was first released back in Nov 86. Only 4 lines really HAD to be changed.

Those familiar with the software of Kurt Casby would expect a first rate BBS here. But many T/S consumers fail to understand the task of software authors today. With a shrinking market, and 6 or 7 possible hardware configurations to target, it isn't exactly easy to please everyone. But for the constraints under which it was written, it is a truely EXCELLENT start. Is was a great day indeed, when I saw in E.A.Brown's catalog that Kurt had written a BBS, with Uploads and Downloads to boot! But a full-blown BBS, such as the ones you log on to regularly, is not written in a day. If there was one standard DOS that we all used, the task would be MUCH simpler.

The original version that Kurt wrote was all in Machine Code. But Kurt didn't want every BBS running the software to look the same. So he added the BASIC portion so that individual SYSOPS could customize their own system. I have heard complaints that all Casboards look the same. But I chaulk this up to the newness of both the software and the sysops in question. It IS a flexible system (which is the only name Kurt gave it,"Flexi-Board") and in time, more "unique" systems will begin to appear, as sysops roll up their sleeves and take the task seriously.

Casboard deals with Loads/Saves the opposite of MTERM. MTERM maintains itself in M.Code and Loads/Saves buffers in the form of standard BASIC files. Casboard maintains itself as BASIC and Loads/Saves in the form of "BYTES" files. This, of course, only works with a disk drive or microdrive.

One problem I had, when first converting the software over to work with the AERCO system, was when I got an Upload and in trying to save the Upload to disk, ended with a "DISK COMMAND NOT UNDERSTOOD" error. Well now I was out of the BBS program, and I wanted to try and save the Upload, but where in memory was it? The manual didn't say. It turns out that the message bases, the Uploads and the Downloads all occupy the same 28.5K of memory (except at different points in time. Let me describe this in terms of a person using the system, and what happens.

Suppose Clive Sinclair calls the BBS. He's greeted by the logon screen which I, the sysop, have customized to say anything I like. It asks Clive for the system password (which can be eliminated). Clive knows the password because he read it in Time Designs Magasine. When Clive logs on, the message base "A" General Interest, is in memory. Clive is looking for QL info. He asks to "S)elect a Message Base". He's given a menu of choices. He picks the QL sub-board. At this point, Casboard SAVES the Board "A" messages to disk (the whole 28.5K, even if there's only 1 message) and then LOADs Board "B" the QL sub-board into the spot where Board A was previously. Clive reads the messages. He reads about an interesting program currently available for Download and wants to get it. He calls for the Download menu. Then he specifies a file (by menu, A,B,C, etc.) then must choose a protocol. Once done, Casboard once again SAVEs the QL message base to disk and LOADs the DL in question into the same spot.

Then it PRINTs "Waiting..." on the screen, upon which Clive knows he must engage the Xmodem routine in his terminal program. Casboard gives no accounting of send time, or number of Blocks, but I (the sysop) have thought of this and include this info on the Download Menu (like this: A-RLE.BIN (1024) 8 Blks). Once the DL is complete, Casboard presents the main menu once again, and waits for further instructions. Being the kind of guy Clive is, he intends to Upload wherever he downloads, so he saves the RLE.BIN file to microdrive on his QL and asks to Upload. Casboard merely asks for a protocol. Clive has the QLTERM program by Rich Moldovan and picks Xmodem. Then Casboard is "Waiting..." once again. Clive engages his xmodem to send the file. Exactly when the upload is complete, Casboard saves the upload to disk, but fails to Thank Clive for his fine gesture. Clive, though, is a responsible user and calls back message base "B" so that he can leave the name and description of his Upload.

It is this alternation of Loads and Saves which is what true disk based software is all about. Suppose we take this system a step farther. Suppose the BBS, as it sit waiting for a user to call, has a very small core program in RAM and no more. It detects a ring and sends carrier. Then it prints the Logon screen and asks for the user's name. Once the name is Input, is prints "One moment please..." and loads the User base from disk. It then runs a sort routine to try and match the input name to a name on the list, etc. Once the user has been accepted, it THEN loads the main menu ONLY, (this is a BASIC program for easy modification). Once the user makes a selection, the main menu is written over by the function just requested. The object here is to MAXIMIZE useable RAM which keeping EVERYTHING not immediately needed on disk! Why didn't Kurt write it this way? Because of the many different mass storage systems.

On some BBS systems, the sysop can be sitting at the computer, but not seeing what the user sees, but rather a summary of commands given. Not true with Casboard, whatever the user sees, the sysop sees (assuming he has the monitor on). The sysop can break in and Force Chat at any time. There is no software provision for rapid disconnection of a troublesome user, but you could simply pull the plug.

Unlike Tinyboard software, this system is designed for use by other types of computers. It can generate Linefeeds and will also adjust for width of screen. If someone calls with an 80 col. display, the Logon screen and menus may be 32 col. but the messages are 80 col. They can also Upload and Download! That is, in ASCII or XMODEM as long as the Xmodem is Checksum rather than CRC. Yes, you could offer MAC, ST or AMIGA files on your Casboard. You must, of course, respect the 28.5 K limit of filelength (unless you modify the program) and the files will only be able to be installed by Upload.

ONLINE STORAGE

You have to remember that this program was written at the request of Eben Brown, who wanted a program which ran on Tape or Microdrive. With a tape system , of course, you are pretty much limited to the 64K. Load and Save to tape is pretty impractical. With the Microdrive, the maximum size wafer is 75K and the controller will handle a maximum of 2 drives. Giving you a total of 150K + RAM The Zebra FDD comes stock with 2 SS/DD 3" drives with a storage of 280K total, however, you could modify it to accept up to 4 drives as long as they were Shugart Compatible. But to move to Quad density, you would need to change the TOS operating system. Editors not able to determine how feasible this is. Larken has introduced a new version of their Interface, it allows 2 DS/DD 5.25" drives at 360K each for 720K total. Both the JLO disc interface and the AERCO

can use four Quad density drives with a total of over 3 Megabytes. Why would you need so much memory? At first, you probably wouldn't. The use would be for Uploading and Downloading.

A discussion of these systems would not be complete without mentioning the operating systems they employ. But we were unable to get any really complete information on this, and feel that incomplete information might do more harm than good. The operating systems vary quite a bit, and it is advisable for any prospective buyer to take these systems into account when buying.

As it stands, the Casboard is a fully functional BBS program. There are some features I'd like to see added, such as passwords and E-Mail and message pointers to tell you where you left off on your last logon. But the pointers are dependent on a password scheme. Kurt says that IF he does another version of the program, he will surely include passwords, since that, so far is the only feature people ask for. This brings up an important point. In the DOCs, Kurt SPECIFICALLY ASKS for feedback on this program. He asks for the most DETAILED description you can give him of what you'd like to see. That greatly increases the chances of such features being included in version 2.0. If you don't bother to tell him what you want- you may not get it. This is a golden opportunity to get what you want. Yet less than 4% of the total owners have bothered to respond! With that level of apathy, I wouldn't be surprised if he didn't even DO a version 2.0. He certainly has no ECONOMIC incentive, since any rewrites will be supplied at the cost of media. If you see a feature missing, PLEASE let him know. He cannot run a BBS from his home, and so depends on YOU for Beta test information. If no one writes, there may BE no ver 2.

THE MICRON SYSTEM

This is a BBS program written for the ZX Spectrum and is a commercial program. It is written to run exclusively in VIEWDATA format. VIEWDATA format is a colored graphics system. This is in contrast to the black on white text only BBS systems we usually encouter here domestically. To use it, both the SYSOP and user must have VTX5000 modem, and a Spectrum or Spectrum emulated TS 2068 (via Romswitch or Omni-emu). In addition, an ZX Interface One is needed which has an RS 232 interface port and microdrives attached.

The program has some pretty amazing features. It includes the terminal program necessary to receive as a user (the receive program is a public domain program). As mentioned earlier, both the BBS and user require the VTX5000 modem. This modem is a direct connect modem plugging straight into the modular British phone jacks. You would need to make a conversion to use it here in the U.S.

The program will allow you to connect up to 8 microdrives. If so configured, up to 700 screens full of information could be held. There are different types of screens you can use. For example, there is a simple text screen, a simple message screen (one user to another, or to the entire user population), private messages, dynamic pages (using simple animation techniques), closed user group and finally password pages. Provisions for uploading and downloading is also provided for (no information on the specific protocols used however).

The program also keeps track of time and date and author of any page in any location of that page. It will accept "keyword" type commands, (ie. by typing "NEWS" , you would be taken to the news index) up to 40 keywords may be used. Price for the most recent version of the software is approximately 25 pounds sterling plus 1.50 for shipping and handling. The package comes on microdrive cartridge (7 programs) and includes a 24 page manual. (Vendor address: Diamond Design Computer Systems, 1 Lewis Street, Stornoway, Isle of Lewis PA87-2QH, Scotland).

I.S.T.U.G. BBS Software

As mentioned elswhere, this software started out as a Tinyboard rewrite, but advanced well beyond that. Very few pieces of Software have received as much "field condition" testing as this one has.

The biggest features obvious to the Sysop are the Real-time clock and the print to 2040 routines. But there are other features not so obvious. For one thing, the program is about 97% BASIC which makes it easier to see how the thing works, and therefore to modify it. There's also room left for these modifications.

I really like the clock, although you need to reset it after each LOAD or SAVE. I especially like the Time Stamping of each message and the fact that the clock advances the date at midnight. It also tells you the total time on the system when you logoff, a very nice touch.

The Mad Programmer has worked very hard, both to eliminate crashes and conserve memory. It appears that the crashes are gone for good, as the ISTUG board has been running continuously for over 6 months without a crash. This is due to extensive trial and error by Paul and Willie over a period of months. They carefully examined the bugs and crashes as they occurred. True science at work.

Here is the difficult aspect of BBS software: When you sit in front of your computer and get a "VARIABLE NOT FOUND" error, it's no problem. You simply "GOTO 10" or "RUN" or whatever. But a BBS must run completely unattended. If it gets such an error message, it's stuck-can't go anywhere. Not only is this an inconvenience to the individual caller, but the board may remain in that state for HOURS, effectively taking the system completely out of commission. So this is Paul's strongpoint: he seems to have found all possible errors and effectively laid traps for them. A special version of this software is being run for the QL COM BBS in New Jersey. Sysop Frank Toemay tells me that local users have tried many things to try and crash the system, including bombarding it with a stream of all the control characters. No one has so far succeeded.

Another feature I really like is the print to 2040 routines. Everytime you go to input a message, it asks you if the message is to the sysop. If so, it engages the 2040. Thus all messages to the sysop are printed out and don't tie up any precious memory. Also printed are the logon time, name of the caller and the time spent on the system. So when the sysop returns to the computer after and absence, there is a complete print out of all activity that has taken place

Because of Paul's scrupulous conservation of memory, there is STILL room for expansion. Over 1200 bytes, in fact. This could easily allow you to interface your mass storage device in order to have more than one message base. Unfortunately I didn't have time to work this out on my AERCO sytem.

But for what it was originally intended to do, run on an unexpanded 2068, this software has the most features so far. I hope it will continue to develop and that various re-writes for disk drives are created. It can be purchased from the developers, Paul Holmgran and Willie Jones (see appendix).

BBS SOFTWARE IN CP/M

When bulletin boards were first becoming popular, CP/M was THE operating system to use. Consequently, there are literally dozens of programs not only written in CP/M, but are also in public domain. That's not quite as perfect as it sounds, because one major component of an RCPM is a program called BYE which controls the modem. It usually needs to be customized a lot to work with the particular computer and modem you're working with. One program, RBBS, is written in Microsoft BASIC, but is best run in compiled state. Another program, TBBS, (also known as the Bread Board System) was originally written in Turbo Pascal. The source code is available, but you need a Turbo Pascal compiler. Still another program MBBS, or Micro Bulletin Board System is written by Kim Levitt. Both the TimexExchange and FWKUG BBS' run on this software. These programs are simply sitting on various boards all over the country waiting for you to download them. However, even though you get the software, it's not a simple matter of booting it up and running it. It's best to get the software from someone who is willing to take the time necessary to explain it to you, and patient enough to take your phonecalls at 10 pm! If not, you may have several disks full of (what might as well be) GREEK. It seems possible to take an RBBS and port it over to a QL which runs Super–BASIC. Super–BASIC can run MS Basic (with a few modifications) and you could end up with a perfectly functional BBS on a QL (any takers)?

MISCELLANEOUS HARDWARE

Clive Sinclair had (among many others) a brilliant idea for the plug-on edge connector concept for his computers. Every single pin from the Z80 CPU was available at the buss connector. This feature increased the number of possible options available to various third party designers such that a host of "add-on" hardware devices have been developed over the years for the T/S computers (eg. joystick, printer, light pen, mouse interfaces etc.). Of prominent note in regards to telecommunications has been the popularity of the RS 232 serial interface in the computer industry. The latest Sinclair computer, the QL included 2 RS 232 ports. However, the original TS 2068 lacked such a port which could be used for modem hookup. In response to this deficiency, there now are two products available which offer the industry standard RS232 configuration which can be added to any TS 2068, thus allowing virtually any modem to be used.

A. AERCO RS 232 INTERFACE

The AERCO RS 232 interface is potentially capable of operating at speeds up to 19,600 baud, although for hardware limitations, the Timex display could not possibly keep up at this speed. It is possible to hookup a separate terminal monitor (one which could be used at a much higher speed) through a second RS 232 device which the AERCO design can accomodate. Therefore, by having two ports available, one could conceivably hookup both a terminal monitor and modem together (or a serial printer).

The interface comes with software which is very user friendly and allows you to configure such items as baud rate, printer driver menu etc. The software was written to operate in the TIMEX mode only (not RP/M), and NO users manual is included (just schematics). As mentioned earlier, the standard interface comes with TWO separate ports. In addition, it is possible to configure each port independent of the other. This is important as it makes it possible to operate two different serial devices which most likely will have different baud rate configurations. Product support is

B. G & C Z-SI/O RS 232 CARD

Introduced by Grey & Clifford Computer Products towards the latter part of 1986, this slick designed hardware addition to the TS 2068 provides the capability of hooking up any RS 232 configured device. Designed by Dave Clifford (of Z-Link fame), the board plugs directly into the rear buss expansion slot and provides a full 64-pin feed through connector to allow other standard Sinclair add-ons to be piggy-backed. When used with Specterm 64 (see the software review section for details), the ability to communicate at 1200 BPS using a standard RS 232 modem is made possible.

Each card contains one standard RS 232 port. An extensive user's manual is provided explaining how to control configuration settings (ie. word length, parity, stop bits etc), in both BASIC and machine code. In addition to being able to attach modems, G & C also plan to put together software for additional peripheral devices. Among those on the list include plotters and digitizers. A unique after product support offered by G & C is ONLINE feedback offered through Dave Clifford's own Timex Exchange BBS. Latest product updates, software revisions, patches etc. are usually posted on the BBS.

COMLINK I

NOTE: We have never seen this product, and only give a description here to let you know it exists. No guarantee can be made on the accuracy of this information, although we have no reason to doubt it. (ED.)

This is actually Hardware, since it is an interface which plugs onto the back of any TS 1000, TS 1500, or ZX81 computer and allows the addition of any RS-232 Modem to your computer. Also, it includes a Terminal program in ROM. This device is widely used to interface the 1000 to a Ham Radio for "Packet Radio" work. But there is no reason it couldn't be used for normal modem commmunications. It operates only at 300 Baud, allows changes to 8 different parameter settings, also Half/Full Duplex. Currently, it has no capture buffer nor Xmodem protocol. It features a HEX protocol which differs from MTERM, which DOES have error checking, but no re-sending of blocks as Xmodem has. This HEX apparently works only INTO your computer, you cannot Upload. However, it DOES have a pretty amazing MACRO routine. You enter text into the macro keys in the form of BASIC REM statements. One macro can send 100 REM statements with 256 characters each, so hypothetically 25K! But we couldn't test this. It supports the 2040 printer, but only copys one screen at a time (like the COPY command). The Developer plans to impliment both Capture buffer and Xmodem in the future. These two would greatly enhance the usefulness of this product. But it's strongest feature is it's ability to link with Packet Radio. A minimal Packet system might cost as little as $200 according to one expert. You need a HAM license to operate it, but the Packets could be echoed all over the country for free. Order directly from the developer, A.Eckhardt/918 Anna St./Boalsburg,PA 16827.

Starting Your Own T/S BBS

STARTING YOUR OWN BBS ?

(Ed Grey, Sysop of the Original Timexchange Sub-board on the now defunt Average Remote BBS in Los Angeles contributed the following information on starting a BBS)

"I have been instrumental in getting several T/S sub-boards started on different BBS'. It is not nearly as difficult as one might imagine. First, you make contact with your friendly neighborhood Sysop. He is the person who usually owns the computer and runs the BBS. Do not attempt to set up a T/S sub-board one computer specific BBS such as an Atari, Commodore or TI BBS unless you only want a message base and not upload and downloading capabilities. These "computer specific" boards usually cannot accomodate Timex file transfer protocols. You will find that most sysops are willing to discuss the possibility of a Timex sub-board with you, just leave him or her a message on the BBS and mention your interest in a T/S sub-board or file area. Most are not familiar with the Timex and won't know what you need, but they would be willing to help if their BBS doesn't have a policy against orphaned computers.

What do you need ? Standard Xmodem file transfer protocol would be nice. Uninterrupted ASCII file transfers would be nice. A multi-message base BBS software would also be nice. All or some of these features are available on many existing BBS', but they are not mandatory to set up a Timex sub-board, they just make the process much easier. Most T/S sub-boards that I helped to set up are no longer in existence. Once set up and operational, they just sat there waiting for the neglected T/S telecommunicators to call and use this new facility. The "Use it or Lose it" axiom is appropriate here. Most sysops, after investing in a system and tying up valuable space online for a sub-board and/or file area, don't want to see that area sit there, unused, for days at a time. They make their computers available to others so they can USE IT. I mention that because your greatest obstacle may not be to find and set up a T/S sub-board, your biggest problem may be to generate continued interest by the Timex users to SUPPORT the sub-board. Certainly you should have a core of at least 5 or 10 local persons interested in, and wanting to use a Timex sub-board. With your base core of users assured, create your sub-board. Use it to exchange information and files and all manner of news related to Timex computers. Spread the word about your board to other Timex-dedicated sub-boards and share information with them. Telecommunications and Bulletin Board Services are for the exchange of messages and data, use it for that and you will be successful. On the other hand, if no one uses it, there is no reason for anyone to call and callers are the lifeblood of a BBS and the sub-boards. Good luck and Keep on Timexing..." (Ed Grey).

EDITOR'S ADDENDUM

So the bottom line is this: It's literally a snap to set up a T/S sub-board. Whether you can drum up enough support to make it a vital, living message base is another question. A number of things contribute to the popularity of a given board: 1) Downloads, 2) Text Files (ie. lists of vendors, user groups, etc.), to ensure that if someone calls from 1000 miles away, there will be SOMETHING to get, even if the messages have been a bit thin lately, 3) Online Newsletters, 4) An active and watchful and responsive Sysop or Co-sysop (one who is willing to put in the time for general maintenance and also seek out new software for download and new text files). The boards we, as editors, liked the best had most, if not all of these things. One last item, don't pick a BBS you have to FIGHT to get on. You need a really powerful draw to get people to go and keep trying and trying.

What would be "icing on the cake?" 1) Someone in the group, (preferably the Co-sysop) who belongs to Compuserve and/or PC-Pursuit who is willing to use those services to bring back news and software to feed onto the board, 2) The BBS itself should be located in a PC-Pursuit city, 3) If you could DEDICATE a hard drive BBS strictly to T/S computers, 4) If you had both 300 and 1200 BPS capability, 5) Lots of patience....

9

International Telecommunications

To the beginning modem user, the idea of telecommunicating overseas might seem intimidating. Indeed, if you just started using your modem yesterday, I wouldn't recommend diving right into the international scene. But believe me, the concept is WELL within the realm of feasible.

What may not be obvious is that there are other ways to connect overseas without the help of traditional phone service. Many other ways, as it turns out. But stop and consider this, how is it that you can connect to Compuserve for $6/Hr.-the same rate all over the country? It's simple, packet switching. What is Packet Switching? It's a method of sending blocks of data from point A to point B utilizing MANY different channels. Some may be fiber optics, some traditional phone lines and some through Sattelite connections. The Packet Switching Service (PSS) such as TELENET, for example, breaks your transmission into packets and sends individual packets on whatever line is open at that particular micro-second. Then the transmission is ultimately reassembled at the receiving end in such a way that you can't tell it was ever broken up. It's a MUCH more efficient use of the lines than a standard phone connection, and thus costs less. Of course, it CAN slow down the transmission (very noticeably so on PC Pursuit). There are a number of these systems, TELENET, TYMNET, and UNINET to name three. Sometimes they share cables and Satellite links, etc., so that they aren't neatly discrete, but all tied together. You can use these systems to call the British, and they can use their systems to call here.

But there are still other alternatives. Let's first look at the cheapest of these, the Fidonet. At the moment, the Fidonet has over 1200 nodes around the world. Most of these are in the US and Canada, but also in England, Sweden, Australia and others. It was the very first network of Micro Computers, and remains the largest. Each individual node is very similar to any other BBS, having Message Bases and Downloads, but with one important difference: Netmail! You can send a message from any Fido (as long as it's part of the net) to any other Fido, INCLUDING OVERSEAS! It DOES cost money. For a message in the US, it's $0.45, for a message overseas, it's $1.33. But these messages can be 60 lines long at 80 Characters/line , 4800 bytes-nearly 5K!

In order to send these messages, on most Fidos, you need to set up an account with the Sysop (send money). But there are some systems which will send them for free. The most IMPORTANT factor, though, is to pick one that's local You will need to check for mail often, and this will be more convenient. At this point, (4/26/87) we've set up a number of nodes where netmail may be sent. Besides having the Net# and Node# to address the Netmail, it's also necessary to mail it to a specific individual, and to spell their name right. The list of current nodes is in the Appendix, along with the Main list of BBS'. The precise method of sending Netmail is fairly simple, if you have trouble, consult the Sysop of your local Fido. Incidentally, many Fido boards have now switched over to new software, one system is called OPUS and the other is called COLOSSUS. The OPUS software is a definate improvement, I haven't seen the COLOSSUS.

As I mentioned, this is an International system, which means we could also arrange nodes in Europe, Canada, Australia or Hong Kong! Anywhere that Sinclair Users might be found. There is one drawback, however. The Fidonet is NOT what you'd call flawless. Some messages simply get lost. We in the 1980's are somewhat spoiled, and have come to expect perfect service. So that when a message gets lost, we are pretty surprised. Especially if the message was an important one, or took a long time to input (and we didn't save a copy). So be advised of this before you start using the Fidonet. But if you can live with

this drawback, it DOES work. This, as I say, is the cheapest route.

The next cheapest route would be MCI Mail (mentioned elsewhere in this Guide). With connections to over 50 countries, you can easily send messages to people in ANY of these. These messages ALWAYS arrive, but they're a tad more expensive.(See Appendix F Pay Systems). It is also possible to set up a BBS on the MCI system, allowing anyone who has access to MCI to get on it. However, they charge the users 30 cents/min. for such connect time. Too expensive for domestic use, but it MIGHT work on an International basis. One drawback to this system, is that both sender and receiver must have MCI Mailboxes, an easy thing here, more difficult abroad. In foreign countries, the users would need to establish an account with their local PSS, whatever it may be called. They need what is called an "NUI" or Network User Identity. They need to have this before they can sign up with MCI Mail. Once they've gotten an account through MCI, their charges to send messages are equal to ours (i.e. $.45 for a 500 byte message.)

The next possibility is one which has just begun, but which may be very fruitful in the future. It's a system called MNEMATICS. It is a pay system, similar to Compuserve (though smaller) which has a very unique feature. Users in Britain can connect to it at a very reasonable cost through the system of Telcom Gold. This is a direct link overseas, no special PSS account is required at all. This was a last minute discovery, so prices will need to be here. It costs $4.50/Hr. non-prime time-the same rate for 300/1200/2400 speeds. The system includes a real-time CHAT function, as well as a number of SIGS. It is the intention of some American Users to try and create a Sinclair SIG on this system, with users from both countries participating. What a download file we could build with THAT kind of input! Keep your eyes out for more info on this!

The next most expensive possibility is the SOURCE, which British Users can also access, but which is a bit more expensive (see Appendix) There is no Sinclair SIG on the Source, and it is their opinion that not enough users exist to start one. But E-mail could be exchanged here. Compuserve can NOT be accessed by the Europeans.

The next possibility is for YOU, the individual user to establish an account with one of the PSS's such as TELENET. Then, using that system, connect to Remote services in the UK, such as Micronet 800. What does it cost? Well it's cheaper than Ma Bell, let me say that. There is a monthly charge of $24, Then, there's a charge of $10/Hr (minimum of one minute), and an additional charge of $12/64K transmitted. At 300 Baud you can transmit about 100 K/Hr if you are transmitting continuously (downloading). Thus the maximum cost at 300 Baud would be $28.80/Hr. from anywhere in the US. A standard phone connection from Phoenix would run closer to $50/hr. No phone access charges would apply (on Telenet) if you are local to a Telenet Node (most major cities).

Micronet 800 costs only '16.00 for 3 months, with unlimited access during non-primetime. This system started in 1983 as two Sysops and a Spectrum. As of June 1986, it had 20,000 members- 7,000 of which were Spectrum owners! This is a VIEWDATA system, which would require a VIEWDATA modem (such as the VTX 5000)

The last option, as mentioned, is a direct connection through the phone lines (sometimes this means satellite link). Don't scoff, it's been done! Ed Grey and Dave Clifford made numerous such calls in the course of developing the Specterm-64 software. They used a 2050 modem which had been modified to work on the European standards. Dave Clifford came up with this modification, and has written an Article for Time Designs. (Look for it in the next issue)

Appendix A
Program Modifications

As Mterm II is one of the oldest and most widely used terminal programs for the TS 2068, many modifications have been developed by different individuals in an effort to add "enhanced" features to the program. This appendix contains several of these which you may find useful.

The following information was downloaded from COMPU-SERVE and revised by Dave Schoenwetter.

***** Modifying your Tasword Two for MTERM use *****

Load your Tasword Two program (with the Bytes, as usual), go to the Menu, and use "b" to exit to BASIC.

1. Machine Code Routine. Starting at Line 9000, enter the following BASIC loader for the machine code:

```
9000 RESTORE : LET ADR=54848
9010 FOR I=ADR TO ADR+62
9020 READ BYTE: POKE I,BYTE
9030 NEXT I
9100 DATA 33,118,92,78,33,119
9101 DATA 92,70,3,33,86
9102 DATA 104,9,34,75,92
9103 DATA 33,87,104,9,34
9104 DATA 89,92,33,102,104
9105 DATA 9,34,99,92,197
9106 DATA 42,8,243,17,86
9107 DATA 104,237,176,33,85
9108 DATA 104,193,22,64,35
9109 DATA 21,32,4,54,13
9110 DATA 22,64,11,120,177
9111 DATA 40,2,24,241,54
9112 DATA 64,201
```

Once you have this typed in and you're sure it's right, enter GO TO 9000. Now you can just DELETE 9000,9112 to get rid of the loader program. Your Bytes are in place.

2. Now you want to modify the BASIC section of TW2. There are three necessary commands you must include:

---RANDOMIZE a
---CLEAR 54015
---RANDOMIZE USR 54848

(Continued on the next page.....)

I just put these in a convenient place in the program, along with some other lines:

```
5000 REM ** MTERM Formatting **
5010 RANDOMIZE a: CLEAR 54015
5020 You can put some PRINT statements in here,
5030 with some explanatory text, etc.
5040 PRINT "Load your MTERM code now, with""TAB 2;"LOAD
     """"CODE: PRINT USR 54016"
5100 RANDOMIZE USR 54848
5200 STOP
```

Note: the final STOP command is important.

Now, whenever you want to format your text file for the MTERM memory buffer, you can just exit to BASIC and enter GO TO 5000.

3. To make things easier, I have expanded my Menu to include the MTERM formatting option. This is what I did:
   --Line 25: change VAL "4" to VAL "3"
   --Line 60 PRINT : PRINT "format text for MTERM buffer f"
   --Line 70: change PRINT AT etc. to PRINT #0;" etc....
   --Lines 110 to 170: reduce each of the "LET i=VAL" numbers by one, for example, IF b=VAL"115" THEN LET i=VAL"5"
   --Insert Line 175: IF b=VAL "102" THEN LET i= VAL "19"
   --Insert Line 670: IF b=VAL "102" THEN GO TO VAL "5000"
   Since you have moved the Menu around a little, some of the other PRINT AT statements around the program won't quite line up.
   --Line 800: just use RETURN (get rid of the junk).
   --Line 900: PRINT AT VAL "7", VAL "0";"Rewind and play the tape to verify""a$: RETURN
   There may be some others, too; you'll find them.In my program I have used a lot of PAPER, INVERSE, etc. That part is up to you.

4. Once you have all your BASIC modifications in place, enter RUN. Go to the Menu and use "t" to save your new program and bytes to tape.

5. Instructions for Use. You can use your modified TW2 program (I call it TasTerm) just like ordinary TW2, for editing, saving, and printing text. There are just a few things to remember:
   --If you intend to upload your text file via MTERM, you must leave the column 64 blank. The machine code inserts an ENTER character at this position, so whatever you put there will be lost. When you begin, just hit Cursor Down once, Cursor Left twice, and use Ext. Mode "D" to set the margin. Use Sym. Shift "AT" to get back to the beginning, and you're set.

(Continued on the next page...)

--Don't load anything into the program that will overwrite the first Help Page. As you can see, the m/c resides on that (formerly) blank line and you don't want to lose it.
Once you use the formatting option, your BASIC program will be lost, so you can't go back to TW2. Just enter

```
LOAD ""CODE : PRINT USR 54016
```

and load your MTERM program. It will start automatically, and your text will be in the buffer.
--When entering text, I recommend leaving W/W turned ON, and R. Justify turned OFF. You don't want to insert a lot of odd spaces that won't make any sense to whomever reads your uploaded text.
--When uploading the text, it will scroll out in 63-character lines, even if the whole line is blank. That's just the way TW2 stores text. You will see a "@" signal at the end of your file. (You'll probably want to delete the "@" signal after it comes out.)

David Pranitis [74756,164]
TASTE.RM 26-JUL-85 6625

******* CHANGES TO ALLOW 64 TASWORD FILES *******

I used the above proceedure and found it to work perfectly, however I did not want to be limited to 63 columns so I revised the code somewhat to allow the full 64 column capabilities of the TASWORD TWO program. The only change necessary is the DATA statements. Use all other proceedures listed above.

******* REVISED FOR 64 COLUMN *********

```
9000 RESTORE : LET ADR=54848
9010 FOR I=ADR TO ADR+48
9020 READ BYTE: POKE I,BYTE
9030 NEXT I
9100 DATA 237,75,118,92,42,8,243,17,86,104
9101 DATA 62,64,237,160,226,90,214,61,32,248
9102 DATA 62,13,18,19,24,240,62,13,18,19,237
9103 DATA 83,75,92,19,237,83,89,92,1,15,0
9104 DATA 235,9,34,99,92,201
```

- Total of 48 entries -

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*** MTERM SMART II patch for AERCO I/F **

** Changes at 58678 to 58772, resolve problem with 'Auto-Dial'. Mar. 20 1985 **
********** PATCH VERSION 6+ **********
To install the patch to your program, load your MTERM SMART II PROGRAM, Enter and RUN the BASIC program listed below.
SAVE"patch"CODE 54016,7721

Basic program to alter MTERM SMART II for the AERCO Printer I/F.

```
4000 RESTORE 4100
4010 FOR f=59173 TO 59175 : READ a: POKE f,a: NEXT f
4020 FOR f=59188 TO 59190 : READ a: POKE f,a: NEXT f
4030 FOR f=58618 TO 58833 : READ a: POKE f,a: NEXT f
4040 PRINT "Save your altered code": STOP
4100 DATA 195,126,229,195,178,229
4105 DATA 42,232,238,237,75,236,238,3,125,185,32,7,124,184,32,3,195
4110 DATA 80,229,62,127,219,254,31,210,80,229,219,127,230,16,32,242,126
4115 DATA 254,10,32,2,62,0,254,12,32,2,62,0,205,48,229,35,195
4120 DATA 2,229,0,211,127,0,219,127,201,0,0,0,0,0,0,0,0
4125 DATA 0,175,119,62,201,24,5,62,35,119,62,245,33,131,229,119,215
4130 DATA 201,62,13,205,48,229,62,13,205,48,229,62,13,205,48,229,33
4135 DATA 117,239,54,13,6,32,43,54,32,16,251,125,50,231,238,201,33
4140 DATA 195,229,126,254,35,32,3,195,63,229,195,69,229,203,79,194,40
4145 DATA 231,201,197,229,42,176,229,237,75,174,229,237,66,32,4,225,193
4150 DATA 241,201,219,127,230,16,32,246,10,205,48,229,3,62,96,184,32
4155 DATA 3,1,0,94,237,67,174,229,24,227,0,94,0,94,229,219,115
4160 DATA 254,12,40,4,254,10,32,1,175,245,42,176,229,119,0,62,96
4165 DATA 188,32,3,33,0,94,34,176,229,241,225,201
```

To print the BUFFER DATA use V and P options from the MTERM BUFFER MENU. The BUFFER CON mode should be set to NONE if you wish to PRINT the BUFFER data End BUFFER printing with CAP SHIFT & BREAK, unless multiple copies are desired.

To toggle the printer ON/OFF while receiving data use CAP SHIFT 8 and P(PRINT). The "<>" symbol will appear on the screen when the print is OFF.
"PRINT" will appear on the screen when the printer is ENABLED.
*****>>>>> The print option should be turned OFF when AUTO-DIALING <<<<<*****
Printing is buffered up to 512 bytes to prevent data loss with slower printers.

Over printing will occur if dip switch is not set for CR only, LF not required.
Check your Printer Manual for setting up your printer.
LINE FEEDS and PAGE FEEDS are filtered. To enable the codes POKE 58659 & 58806 to 0 for PAGE FEED or 58653 & 58810 to 0 for LINE FEED.

Your comments appreciated. For questions, send stamped self addressed envelope.

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***** ComLIST AND ComPRINT FOR AERCO I/F AND MTERM *****

USING THIS PROGRAM WITH MTERM AND AERCO CENTRONICS I/F WILL ENABLE YOU TO TRANSFER LPRINT DATA FROM A BASIC PROGRAM TO THE MODEM OR TO SEND A BASIC LISTING. THE PROGRAM USES THE AERCO PROGRAM TO FORMAT THE LPRINT OR LLIST DATA AND SEND IT TO THE MODEM INSTEAD OF THE PRINTER. MTERM IS USED FOR MAKING THE CONNECTION AND INITIALIZING THE MODEM.

TO USE THIS PROGRAM YOU MUST FIRST HAVE YOUR AERCO PRINT PROGRAM OPERATIONAL IN THE SYSTEM, THEN LOAD THE MTERM CODE. DO NOT RUN MTERM AT THIS TIME OR THE PRINT CODE WILL BE WIPED OUT. LOAD THE FOLLOWING BASIC PROGRAM AND ENTER RUN 9995. YOU HAVE. NOW ALTERED MTERM TO PREVENT OVERWRITING THE AERCO CODE AND ALTERED THE AERCO PROGRAM TO SEND DATA TO THE MODEM. ANY BASIC LLIST OR LPRINT STATEMENT WILL NOW SEND THE DATA TO THE MODEM. IF YOU WISH TO USE THE PRINTER ENTER RUN 9985 AND THE PRINTER CODE WILL BE RESTORED.

********* BASIC PROGRAM TO ALTER AERCO AND MTERM **********

```
9985 REM LPRINT AND LLIST
9987 POKE 64554,127
9988 RESTORE 9989: FOR f=64528 TO 64537: READ a: POKE f,a: NEXT
     f:STOP
9989 DATA 127,203,79,40,2,207,162,203,103,40
9995 REM CPRINT AND CLIST
9997 POKE 61175,250: POKE 64554,115
9998 RESTORE 9999: FOR f=64528 TO 64537: READ a: POKE f,a: NEXT
     f: STOP
9999 DATA 119,0,0,0,0,0,0,203,87,32
```

TO SEND A BASIC LISTING TO ANOTHER COMPUTER OR RBBS ENTER THE PROGRAMS AS STATED ABOVE. NEXT LOAD THE BASIC PROGRAM TO BE LISTED. ENTER "PRINT USR 54016" AND USE MTERM TO CONNECT AND SET UP FOR THE DATA TRANSFER. THEN EXIT MTERM TO BASIC AND ENTER LLIST ,THE LISTING IS NOW BEING SENT TO THE MODEM. THE SCREEN WILL BE BLANK UNTIL THE LISTING IS COMPLETE AND THEN "0 OK,0:1" WILL APPEAR. YOU CAN NOW RE-ENTER MTERM AND COMPLETE THE CALL. RUNNING A BASIC PROGRAM WITH LPRINT STATEMENTS WILL ALSO SEND DATA TO THE MODEM HOWEVER RECEIVE DATA WILL NOT BE DISPLAYED.

ALL DATA SENT TO THE MODEM WILL BE FORMATTED AS PRINTER DATA BY THE AERCO PRINT PROGRAM, LINE FEEDS AND PRINT WIDTH. CAPS SHIFT AND BREAK WILL HALT THE AERCO PROGRAM AND STOP THE DATA TRANSFER, BUT YOU MUST RE-ENTER MTERM TO END THE CALL AND HANG UP THE MODEM.

Dave Schoenwetter

WEISER BUFFER UTILITY by Rebecca Weiser
(See description in "More Notes on MTERM II")

This program is based on the Sincus Buffer Utility by Dave Schoenwetter as well as the "FASTDIAL" program from Micro-systems BBS. The first half of this listing looks a little like Schoenwetter's "Aerco Printer I/F" utility program from a 1985 edition of SINCUS NEWS. I've altered both the BASIC and the M.C.

First, type in the BASIC listing as shown. Use tokens wherever you can, (ex. " LPRINT AT ") Here's the BASIC listing:

```
  1 REM *Sincus Buffer Utility*12345678911234567892123456789312345678941234567895123456789612345678971234567898123 4
  5 BORDER NOT PI: PAPER NOT PI: INK VAL "9": CLS
 10 INPUT "B)lip Bfr. LIST , R)edial,""S)ave, E)dit, or T)erm? "; LINE a$: IF a$="t" THEN PRINT USR 54016
 18 GO TO VAL "20"+(VAL "40" AND a$="b")+(VAL "180" AND a$="s")+(VAL "210" AND a$="e")+(VAL "280" AND a$="r")
 20 LET s=PEEK VAL "26816"+VAL "256"*PEEK VAL "26817"
 30 PRINT "Buffer BEGIN : ";s
 40 LET t=PEEK VAL "23627"-SGN PI+VAL "256"*PEEK VAL "23628": PRINT "Buffer STOP : ";t: FOR f=s TO t
 54 PRINT CHR$ PEEK f;: IF PEEK f=VAL "13" THEN PRINT , PAPER VAL "6";f
 58 NEXT f: PRINT PAPER VAL "6"t;" BUFFER STOP "
 60 INPUT "P)rint, U)pload, T)rim? "; LINE a$
 62 GO TO VAL "10+(VAL "90" AND a$="p")+(VAL "70" AND a$="t")+(VAL "58" AND a$="u")
 68 INPUT " MOVE TO ";a"From ";m"" STOP AT ";b: LET b=b-m+SGN PI
 70 LET h=INT (a/VAL "256"): POKE VAL "26726",h: POKE VAL "26725",a-h*VAL "256"
 72 LET h=INT (m/VAL "256"): POKE VAL "26729",h: POKE VAL "26728",m-h*VAL "256"
 74 LET h=INT (b/VAL "256"): POKE VAL "26732",h: POKE VAL "26731",b-h*VAL "256"
 76 PRINT USR 26724: GO TO VAL "60"
 80 INPUT " ERASE AT ";s:LET h=INT (s/VAL "256"): POKE VAL "26715",s-h*VAL "256": POKE VAL "23628",h: POKE VAL "23727",PEEK VAL "26715": RUN 86
 86 PRINT  FREE ;" FREE ": GO TO VAL "10"
100 INPUT " LPRINT AT ";s: PRINT " LPRINT AT ";s: LET h=INT (s/VAL "256"): POKE VAL "26740",h: POKE VAL "26739",s-h*VAL "256"
160 INPUT " TO ";t: PRINT " TO ";t: LET h=INT (t/VAL "256"): POKE VAL "26743",h: POKE VAL "26742",t-h*VAL "256"
180 PRINT USR 26738: GO TO VAL "10"
200 INPUT " SAVE ";a$
205 SAVE a$ LINE 210: STOP
210 POKE VAL "61166",VAL "96": FOR f=VAL "54066" TO VAL "54099": POKE f,NOT PI: NEXT f: POKE VAL "54095",SGN PI: POKE VAL "54098",VAL "33": POKE VAL "54100", VAL "250": POKE VAL "54101",VAL "175"
220 RANDOMIZE USR 26808: RUN
230 ON ERR  GO TO VAL "260": LET t=PEEK VAL "23627"+VAL "256"*PEEK VAL "2362
 LET s=PEEK VAL "26816"+VAL "256"*PEEK VAL "26817": LET a$="": LET p$="......
240 INPUT (p$); LINE b$: LET a$=a$+b$+CHR$ VAL "13": PRINT b$: IF LEN a$>t-s THE
250 GO TO VAL "240"
260 ON ERR  RESET : INPUT "R)eplace bfr./S)how? ";b$: IF b$="r" THEN  LET h=t-(LEN a$ OR LEN a$>=t): FOE e=s TO h: POKE e,CODE a$(e-s+SGN PI): NEXT e
270 IF b$="s" THEN  PRINT a$
280 RUN
```

```
300 LET a1=NOT PI: INPUT "A)ll/O)ne? ";a$: IF a$="a" THEN  LET a1=SGN PI: RESTO
RE VAL "282": GO TO VAL "304"
302 INPUT "Phone #?";a$: LET n$="": GO TO VAL "319"
304 READ a$,n$: IF a$="" THEN  RESTORE VAL "304": GO TO VAL "304": DATA "48646
0","Smg","6936126","IO","6768823","Br","4845858","Dementia","4838422","Mrph","4
236436","WL","4228282","",4867754","ACORN","4367738","NEI","6323333","CCS",""
319 CLS : OUT 119,31: PAUSE CODE "2": PRINT AT VAL "10",VAL "4";"       DIALING "
;a$;" -- ";n$
330 FOR i=SGN PI TO LEN a$: LET a=VAL a$(i): LET a=a+VAL "10"*(NOT a): PAUSE C
DE " ": FOR d=SGN PI TO a: FOR e=INT PI TO VAL "4": OUT 119,e: PAUSE 2.5: NEXT
e: OUT 119,SGN PI: OUT 119,2: NEXT d: NEXT i: GO TO VAL "450"
460 FOR i=SGN PI TO 500: LET ch = IN 119: IF ch=133 THEN FOR j=SGN PI TO COD
"-": IF (NOT (IN 119=133)) THEN  GO TO 465
461 IF ch<>133 THEN GO TO 465
462 NEXT j: CLS : PRINT  FLASH SGN PI;"C O N N E C T E D ! !": GO TO 500
465 PRINT AT VAL "10",VAL "8": PAPER 6;"Waiting "
468 NEXT i: OUT 119, NOT PI: OUT 119,NOT PI: OUT 119,NOT PI: GO TO 310-(15 AND
a1)
500 FOR i=SGN PI TO VAL "10": BEEP .05,18:NEXT i
520 POKE 61157,24: POKE 61158,6
530 POKE 61170,184: POKE 61172,184
540 RESTORE 600 : FOR j=61193 TO 61211: READ m: POKE i,m: NEXT i: FOR i=61311
O 61331: POKE i,32: NEXT i : POKE 61699,21
580 OUT 119,34: PRINT USR 54016
600 DATA 254,147,27,95,254,147,27,95,234,246,50,193,154,89,193,247,105,105,121,
195
```

Now that you have the BASIC typed in, save it for safety. Then you want to Load in the Machine code into the REM statement in Line 1. You can use a FOR Loop in the command line like so:

FOR e=26715 TO 26821: INPUT s: POKE e,s: NEXT e <Press ENTER> & type in the bytes listed below at their respective locations. When it's done, you should have the 0 OK, 0:5 report. Here's the bytes to type in:

Address	Byte	Address	Byte	Address	Byte
26715	200	26751	40	26787	6
26716	50	26752	34	26788	0
26717	54	26753	62	26789	61
26718	55	26754	127	26790	32
26719	50	26755	219	26791	253
26720	56	26756	254	26792	16
26721	204	26757	31	26793	251
26722	68	26758	48	26794	62
26723	76	26759	27	26795	13
26724	17	26760	219	26796	211
26725	70	26761	127	26797	127
26726	156	26762	230	26798	0
26727	33	26763	16	26799	219
26728	111	26764	32	26800	127
26729	156	26765	243	26801	201
26730	1	26766	126	26802	42

Address	Byte	Address	Byte	Address	Byte
26731	66	26767	254	26803	75
26732	6	26768	10	26804	92
26733	237	26769	32	26805	34
26734	176	26770	2	26806	192
26735	66	26771	62	26807	104
26736	75	26772	0	26808	33
26737	201	26773	254	26809	192
26738	33	26774	12	26810	104
26739	189	26775	32	26811	34
26740	120	26776	2	26812	19
26741	1	26777	62	26813	211
26742	6	26778	0	26814	201
26743	124	26779	211	26815	52
26744	3	26780	127	26816	75
26745	125	26781	0	26817	115
26746	185	26782	219	26818	55
26747	32	26783	127	26819	56
26748	4	26784	35	26820	57
26749	124	26785	24	26821	56
26750	184	26786	214		

If you got the 0 OK, 0:5 report, then you may have got it right, no guarantee. Next, enter "RANDOMIZE USR 26802" . This stores the program size in 1 REM. NOTE: If you ever modify this BASIC program (such as by changing the phone numbers in line 304) then you MUST repeat this RANDOMIZE statement before you can run the program.

After that RANDOMIZE you should save it again to tape and THEN you can RUN the program. You should get a menu. If not, you made a mistake typing it in. If you DO get a menu, then choose "S" to SAVE it.

Next LOAD MTERM

Re-LOAD this Buffer Utility

When you LOAD it, it should auto-run and give you a menu. You can key in "T" and it will call MTERM. You will note that the buffer is reduced in size by about 3K. Your settings must be CON: NONE and CR: OFF. To capture data, just open the buffer as usual and it will become sort of a tag at the end of the BASIC program. Close the buffer when done. You'll probably want to disconnect from the service before going on too.

Exit to BASIC and RUN.

Just tap <enter> to view the buffer. Addresses within the buffer are shown at each <enter>. These are for you to use for printing, etc.

Other Notes:

B)lip Bfr.LIST, R)edial,
S)ave, E)dit, or T)erm?
(see explanation below). "R)edial" is an autodialer and will dial and/or redial "O)ne" Phone # till connected, or "A)ll" the phone #'s in the DATA of Line 304, in series, till one is reached. MTERM is then automatically called, but you must be there to tap <enter> a few times. There are a few bulletin Boards that don't respond well to this. No problem...you just call them back. Feel free to

edit line 304, but remember the RANDOMIZE USR statement when you're done!! Each BBS needs a label (may be "") but the end of data is flagged by the BBS # being "".

E)dit just lets you type in text. This text gets stored in the variable a$ along with the <enter> characters. To quit, type Cap Shift/6 to generate an error condition your new text, starting at the beginning of the buffer. This SHOULD automatically check that you don't overwrite the end of the buffer. But it DOES, oddly, end with a subscript error. This is normal. This process is slow, since the loop is in BASIC. S)how just lists your text without replacing your buffer.

The B)lip Menu: P)rint, Upload, T)rim?

'P' for Print. At 'LPRINT AT ' type the address within the buffer where you want to start printing. At "TO" type the address where you want to quit. 'U' to move text around within the buffer itself. This is FAST (uses a M.Code routine I (Rebecca) added. But it only works if you move from .a higher address to a lower one, else the ending address of the block of text you're moving must NOT exceed the address you're moving it TO! (If it does, you get some characters repeatin that it won't overwrite the end of the buffer. As an example: Suppose your buffer starts a say, 30000, but everything up to there is garbage. You type 'U' and get some prompts and

MOVE TO 29515
From 30000
STOP AT 35000 ...for that last number (35000 here), you could use any number text you want to move. Then you want to pay close attention to the number printed on the screen by the machine code. You may want to POKE an <enter> here, or even erase the buffer beyond that point (see instructions below). That number points to the next byte past the end of the block of text you just moved. By the way,the USR call in line 76 moves the block of text. Don't change this to a LET x=USR type statement. It will crash the system. But PRINT USR works fine.

'T')rim will erase the buffer beyond a specified address. Suppose your buffer was OK up to , say, location 34000, but there's garbage after that. Type 't' and answer 34000 to the " ERASE AT " prompt. Now your buffer will end at 34000 instead of 35000.

I should add that, while printing, you can stop by pressing <BREAK>. And one thing I really like about this program is you can save your buffer as part of the program! That is, with text in the buffer, select 's' from the Main Menu (of the Utility) and the buffer will be saved with your program. And you can VERIFY it and LOAD it like any other program. I don't recommend MERGE. You can LOAD it for printing, without MTERM in memory.Good Luck! Rebecca Weiser...

RUNNING MTERM II IN SPECTRUM MODE

1) CLEAR 53950
2) Load Mterm and then RAND USR 54016
3) POKE the following: POKE 54554,207 : POKE 54555,255
4) Save the customized version: SAVE "MTERM"CODE 54016,7721

When using this Spectrum version, if you exit to BASIC, you will see the Mterm Menu (instead of a blank screen). Simply hit (ENTER) and you will see a clear screen with the familiar cursor.

BUFPRINT 3.0 by Dave Pranitis

This is a machine code routine that will let you print out parts or all of your MTERM memory buffer to a full-size printer via TASMAN Centronic Interface.

First, LOAD the "tasbuff" code supplied with the TASMAN cpi. Next, type the following BASIC program to load up the "BUFPRINT 3.0" code:

```
10 LET SUM=0
20 FOR I=64000 TO 64263
30 READ A: LET SUM=SUM+A: POKE I,A
40 NEXT I
50 IF SUM=32333 THEN PRINT "CODE O.K.": STOP
60 PRINT " ERROR IN CODE! RE-CHECK ": STOP
4000 DATA 13,13,20,1,32,80
4006 DATA 114,105,110,116,63,32
4012 DATA 20,0,32,33,141,92
4018 DATA 126,33,143,92,119,33
4024 DATA 60,92,203,134,33,4
4030 DATA 92,126,254,255,32,251
4036 DATA 205,0,91,33,0,250
4042 DATA 6,15,126,215,35,5
4048 DATA 32,250,58,4,92,254
4054 DATA 255,40,249,203,137,58
4060 DATA 8,92,254,121,32,2
4066 DATA 203,201,215,62,13,215
4072 DATA 203,129,42,75,92,17
4078 DATA 86,104,237,82,124,181
4084 DATA 202,234,250,235,33,86
4090 DATA 104,126,254,13,40,11
4096 DATA 254,10,202,2,251,62
4102 DATA 31,150,48,17,126,215
4108 DATA 203,73,40,11,126,205
4114 DATA 248,250,229,33,59,92
4120 DATA 203,142,225,35,27,122
4126 DATA 179,202,234,250,58,4
4132 DATA 92,254,255,202,203,250
4138 DATA 58,8,92,254,112,32
4144 DATA 4,203,201,24,54,254
4150 DATA 109,32,9,62,13,205
4156 DATA 248,250,203,137,24,41
4162 DATA 254,102,32,4,203,193
4168 DATA 24,33,254,115,32,4
4174 DATA 203,129,24,25,254,32
4180 DATA 32,17,229,213,197,1
4186 DATA 0,0,205,233,48,205
4192 DATA 235,31,193,209,225,24
4198 DATA 4,254,226,40,31,229
4204 DATA 33,140,92,54,2,225
4210 DATA 203,65,194,91,250,229
4116 DATA 213,197,6,0,14,2
4222 DATA 205,233,48,205,235,31
4228 DATA 193,209,225,195,91,250
4234 DATA 33,60,92,203,198,203
4240 DATA 72,200,62,13,205,248
```

```
4246 DATA 250,201,197,213,229,205
4252 DATA 62,91,225,209,193,201
4258 DATA 62,13,119,195,107,250
```

You probably won't need this BASIC again, but SAVE it somewhere, just in case. Now RUN it..If you get an error message, you made a mistake typing in the bytes. If everything is "OK" then,

SAVE "tasbuff" CODE 23296,256: SAVE "bufprint" CODE 64000,264

**INSTRUCTIONS FOR USING BUFFERPRINT VERSION 3.0 **

1.When your MTERM buffer contains the data you want to print out, exit to BASIC via Main Menu option "E". Your screen may show some garbage or nothing

2.Enter this command directly:

LOAD "" CODE: LOAD "" CODE : PRINT USR 64015

and start the tape with "tasbuff" and "bufprint" . The program will start with a "PRINT?" prompt.

3.If you press "y", the buffer will be printed out from the beginning. Be sure your printer is on and ready to go. If you press "n", the buffer will come out on your screen without printing.

4.While the program is running, the following keys are used to control it:

<p> activates the printer. Whatever follows gets printed.

<m> de-activates the printer. Buffer will continue to scroll out on your monitor. This key also gives you linefeeds, if pressed more than once. (You can flip back and forth between <p> and <m> as many times as you like to print out sections of the buffer)

<f> for FAST mode. This kicks Bufprint into high gear to skip through the buffer quickly.

<s> for SLOW mode. Bufprint starts out in SLOW mode after you answer the "PRINT?" prompt.(Again, you can flip FAST and SLOW whenever you want.)

<SPACE> or <BREAK> for temporary stop. Press any other key to resume. Note that if the key you press to resume is a control key, it will have it's usual effect. If oyu press <SPACE> or <BREAK> repeatedly, you can creep through the buffer, one character at a time.

5.To exit the program before the entire buffer has come out, use the Timex STOP command (Symbol Shift/A).

I recommend that you permanently set your DSPW to 80, so you can take advantage of the full width of your printer.

Note. This program occupies a section of memory that is not occupied by MTERM; however, MTERM Does use this section during it's normal operation. So, if you LOAD Bufprint and MTERM together, and then go on-line, the Bufprint code will be obliterated. Don't try to use it or you'll crash. Just exit to BASIC and LOAD Bufprint.The advantage of this version of Bufprint (over the BASIC edition I sent up a while ago) is that it uses none of the low address memory used by the buffer. I have used it to print out a completely full 27256 bytes) buffer. As always, I would appreciate any of your questions or suggestions for improvements.David Pranitis/Compuserve 74756,164/POBox 36/Johnson City,NY 13790

MORE TIPS (COURTESY OF SINC-TIMES NEWSLETTER, NE FLORIDA USER GROUP)

- The transmit function support xon/xoff protocol Use CTRL-S or CTRL-Q
- The receive buffer may be opened/closed remotel CTRL-R to open, CTRL-T to close
- When VIEWing the buffer, use the BREAK key to pause and resume
- Transmitting with the buffer open and in half duplex will fill the buffer with a copy of the transmitted data

ZTERM-64 XMODEM FIX

By Edwin L. Schoen

The patches I have made for Zterm-64 were at the request of Gary Lessenberry who communicated with one of the original Zterm programmers, Jeff Street. According to them, the problems were concerning the final blocks of both the SEND and RECEIVE functions. When sending, Zterm did not fill the last block with CTRL-Z's when the data in the block was less than 128 bytes long. When receiving, it left the CTRL-Z's (that were being used as a last block filler) within the buffer which will corrupt the data and sometimes hang up your receiver, especially if the file was a program.

The first problem was easy to fix, and hard to find a memory location to implement. However, because Zterm-64 is so nicely written (Modular, to coin a buzz-word), I was able to simply change the fill character at location 57875 to a 26 (CTRL-Z) and jump back into the part of the program that stores a byte and updates the checksum which the original program never did for its fill character (NULL).

The second problem of removing the fill characters (CTRL-Z's) from a final block was much more difficult, since Zterm makes no attempt to update ELINE and other system variables except PROG (start of buffer address 31510) and VARS (end of buffer+1). It may be of interest that when you enter Zterm, PROG=31510=VARS and this address contains 128 and RAMTOP (PEEK 23730) points to 49151. Thus, the usable area of memory is 49151-31510 = 17641 bytes. Zterm only allows the use of 17000 bytes for send/receive and presunably the extra 641 bytes are reserved for the stack. Note that when doing an xmodem receive, the Zterm buffer will reflect the total number of bytes recieved, including the filler. Therefore, its buffer value (a multiple of 128) may not match the value of the sender's buffer.

Getting back to the fix for receiving data via Xmodem. I found that the area immediately after Zterm (address 58602) was not used and this is where my patches are now located. These patches backup the end of buffer pointer (VARS) over all the CTRL-Z filler (58620=26=CTRL-Z) and terminate when any other character is found. If the terminal character is a CR or LF, the patches simply bump VARS up one byte and inserts the start of VARS marker (128). If the terminal character is anything else, the patched append a CR as the last byte of the buffer and then bumps VARS beyond the CR where they insert the 128 marker.

```
* * * * * * * * * * * * * * * * * *
* Zterm Patch Program Listing *
* * * * * * * * * * * * * * * * * *

10 REM This BASIC program contains my fixes for the Zterm-64 Xmodem bugs. They
   take care of the problems with the last block sent or received.
12 REM Simply CLEAR 47000, LOAD "ztermcod" CODE and then RUN this program.
   That's All Folks!
14 REM The first fix pads an incomplete final block with CTRL-Z's when sending.
   The second fix removes the CNT-Z's from the last block received.
16 REM Zterm-64 Fixes by:
18 REM Edwin L. Schoen, 4/2/87
20 DATA 57874,4,62,26,24,242
22 DATA 58298,2,234,228
24 DATA 58602,40,229,42,75,92,197,6,128,43,126,254
```

MASTER BBS LIST
PAGE 1

BBS NAME	PHONE	PARM	BPS	HRS	PC-PURS
ALICE'S RESTAUR	914-477-8017	7-1-E	300	24	N
BILL'S OBSESSION	404-377-2550	8/1/N	300/1200	24	Y
BUS DEPOT	904-262-6761	8/1/N	300/1200	24	N
BUBBS	607-693-3359	8/1/N	300/1200	5pm-9am	N
CLEVLAND FREE NET	216-368-3888	8/1/N	300/1200/2400	24	Y
COMPUSERVE	(LOCAL NOS.)	7/1/E	300/1200/2400	24	-
FLEXI-BBS	617-646-4425	8/1/N	300	10pm-6am	Y
FWKUG	817-540-4183	8/1/N	300/1200/2400	24	Y
ISTUG	317-898-3903	8/1/N	300	24	N
JJ'S FIDO	505-522-7081	8/1/N	300/1200	24	N
KING'S MARKET	303-665-6091	8/1/N	300/1200/2400	24	Y
LOONEY BIN	619-390-9470	8/1/N	300/1200	24	N
LT-BBS	805-942-7301	8/1/N	300/1200/2400	24	N
MAINSTREET DATA	619-429-6624	8/1/N	300/1200	24	N
MCI MAIL	(TELENET)	8/1/N	300/1200/2400	24	-
NIGHT OWL	312-459-5721	8/1/N	300/1200	24	Y
NORTHPOST	219-256-5879	7-1-E	300	?	N
OMNINET	718-837-2881	8/1/N	300/1200/2400	24	N
OWEGO FREE ACAD	607-754-3420	8/1/N	300/1200	24	N
PEOPLE LINK	(LOCAL NOS.)	8/1/N	300/1200/2400	24	-
QLCOM	201-328-2919	8/0/E	300	24	N
RMG	503-656-8072	8/1/N	300	10P-12N	Y
SERIAL PORT	313-286-0145	8/1/N	300/1200/2400	24	N
SOURCE	(TELENET)	7/1/E	300/1200/2400	24	-
STARTEXT	817-877-1041	8/1/N	300/1200	24	-
TIMEX EXCHANGE	213-329-3922	8/1/N	300/1200	24	Y
TYLER TIMEX	214-593-3331	8/1/N	300	6P-8A	N
TSU	216-327-1099	8/1/N	300/1200	24	N

MASTER BBS LIST
PAGE 2

BBS NAME	PHONE	PARM	BPS	HRS	PC-PURS
PGHTSUG	412-481-9327	8/1/N	300	?	N
PDSE	415-571-6911	8/1/N	300/1200/2400	24	Y
SINC-CITY	617-986-8449	8/1/N	300	24	Y
TIME HEX	317-362-8085	8/1/N	300	?	N
TIME WARP	(new number)		300	?	?
TOXIC DUMP	609-890-6347	8/1/N	300	24	N
DOWNLOADERS ANONYMOUS Toronto	416 844-2035	8/1/N	300/1200	24	N

```
25 DATA 13,40,15,254,10,40,11,254,26,32
26 DATA 4,16,240,24,9,35,54,13,35,54,128
27 DATA 34,75,92,193,225,205,127,194,201
30 REM Patch SEND buffer: GO SUB 60: REM Call my FIX routine: GO SUB 60: REM
   Fix RECEIVE buffer end-pointer: GO SUB 60
40 SAVE "ztercod"CODE 47000,16384
50 BEEP .25,10: BEEP .25,10: BEEP .25,10: BEEP 1,6
51 BEEP .12,8: BEEP .12,8: BEEP .12,8: BEEP 1,5
52 STOP
60 READ Adrs: READ Size: FOR i=Adrs to Adrs+Siz-1: READ v:
   POKE i,v: Next i: RETURN
```

This BASIC program is available for download in the Timex Upload/Download area of the Nite Owl Special BBS.

Mterm II Quick Tips:

Load Mterm II, exit to basic, then ENTER (from the immediate mode): FOR x = 54066 TO 54088: POKE x,0: NEXT x (ENTER). This modification of Mterm II will allow you to exit to Basic and re-enter Mterm II without losing your phone numbers and macro key settings.

When saving Mterm II if you use SAVE "mterm" CODE 54016,9216 (instead of 54016,7721), you will save your phone numbers along with Mterm.

In order to speed of the telphone dialing from wuthin Mterm II, POKE the following into the Basic area and then re-SAVE your Mterm II program. POKE 54835,72: POKE 54836,4: POKE 54846,5: POKE 54847,3: POKE 54856,26: POKE 54857,44.

NOTES ON THE WESTRIDGE 2050 MODEM

OUT 119,0	-	Hangs up the phone
OUT 119,1	-	Stops carrier tone, does not hang up phone
OUT 119,2	-	Starts carrier tone
OUT 119,3	-	Opens modem relay contacts
OUT 119,4	-	Closes modem relay contacts
OUT 119,31	-	Takes phone off-hook for dial tone
OUT 119,34	-	Starts carrier tone

If IN 119 = 133 then the modem is in the "connect" mode
Port 115 carries the DATA
Port 119 controls the modem

Appendix B
BBS Menus

```
                    **** KING'S MARKET BBS ****
                          (303) 665-6091

                  (*)  Welcome to the Vestibule  (*)
                    Before you, The Building Directory

<C>ontents ...... Main System Menu  <D>irectory ..... System Menu Tree
<R>ead ........ Latest System News  <O>nline Programs ...
<P>C Software Scam!!!               <H>elp ........ Info and Utilities
<A>bort ........ Logoff The System

                          <C>ontents - Main System Menu
    .    <K>ing's Market                    .    <I>nterests and User Groups
    .    <N>uance and Exposition            .    <G>eneral Section
    .    <S>eminars                         .    <M>erchandise Locator
    .    <A>bort ... Logoff System          .    <R>ead New Messages
    .    <K>ing's Market                    .    <E>lectronic Mail
    .    <T>eachers and Computers

                    (*) Timex/Sinclair User's Group (*)

                      Resource persons for this section:
                       .  Roger Hunter    Frank Holland

<R>ead Messages ....                    <S>can Messages ....
<L>eave Message ....                    <B>uy, Sell, Trade Section
<U>pload  ... T/S Software              <D>ownload .. T/S Software
<I>nformation Section                   <G>o back, <C>ontents
<H>elp, <A>bort or <Q>uit quick         <V>estibule

                  (*) Timex/Sinclair Information Section (*)

                    <1> TIMEX/SINCLAIR USERS GROUP (MILE-HI TSUG)
                    <2> SINCLAIR QL TECHNICAL SPECIFICATIONS
                    <3> SOFTWARE/HARDWARE RESOURCES
                    <4> Sinclair Authorised Dealers
                    <5> Timex/Sinclair Newsletters and Pubs
                    <6> Timex/Sinclair Repair Resources
                    <7> BBS Systems with Times/Sinclair Info
                    <8> Timex/Sinclair Festival Information
```

>>> TIME-=<X>=-CHANGE <<<
(213)329-3922

MBBS Functions:

A = Auto wrap toggle	K = Kill message	S = Scan messages
B = show Bulletins	M = Mode toggle	T = Talk with sysop
C = exit to CP/M	N = set # of Nulls	U = new User message
E = Enter message	P = change Password	W = Welcome message
G = Goodbye (hangup)	Q = Quick summary	X = eXpert toggle
H = show Help file	R = Read message	? = print this menu

CP/M commands on this system:

MBBS - To Re-enter MBBS
DIR - To Get directory of current disk/user
TYPE filename.ext - To Preview file before downloading
SYSMAP - For a 'MAP' of the system.
BYE - To Disconnect (quick)
HELP - More RCPM command descriptions/tips

***** THE TSU BBS *****
(216) 327-1099

TSU MAIN MENU

[A].....Access Message Base	[B].....Reread System Bulletin
[C].....Chat with Sysop	[D].....Goto the Download Menu
[E].Edit Terminal Configuration	[F].....Time and Time on System
[G]...Toggle ATASCII/ASCII mode	[H].....Help File
[I].....Info about this system	[O].....Log off System
[P].....Change your password	[T].....Goto The Text File Menu
[U].....Goto the Upload Menu	[V].....Take a Survey
[W].....Survey Results	[X].....Users Log
[Z].....Expert Toggle	

TSU MESSAGE BASE MENU

[A].....Select a Board to Read	[B].....Select a Board to Scan
[C]..Select a Board to Post to	[D]Read Messages on all boards
[M].....Return to Main Menu	

Select board to READ:

<A> GENERAL	<B> TIMEX1000/1500	<C> TIMEX 2068 SIG
<D> QL SIG	<E> OLIGER SIG	<F> COMMODORE SIG
<G> ATARI SIG	<H> BBCG	<I> THE FIX IT BOARD
<J> AERCO SIG	<K> CPM SIG	<L> SP DOS SIG
<M> EMAIL	<CR> Exit	

```
You are now entering... The Timex Zone
                        Your Host: Gary Lessenberry

Bulletin Board Level Command Summary.

          =+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
          !               ! Read ! About ! Scan !
          =+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
          Next Bulletin ! [CR] !   A   !  S   !
          From End      !  R-  !   A-  !  S-  !
          Bulletin #x   !  Rx  !   Ax  !  Sx  !
          New Bulletins !  RN  !   AN  !  SN  !
          All Boards    !  RA  !   AA  !  SA  !
          =+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
          [P] Post a bulletin  ![B] Current    !
          [L] List board names ![F] Feedback   !
          [x] Goto board #x    ![E] Edit       !
          =+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=+=
          [M] Mail to Sub-SYSOP![V] View Subop!
          [T] Date/Time Info   ![+] Forward    !
          [Q] Quit to Main Menu![-] Backward   !
          [OFF] Leave System

Up/Download Commands:

   Ax <=- Description About Pgm #x     Dx <=- Download Pgm #x
   L  <=- List U/D libraries           >  <=- Go to Next U/D Library
   <  <=- Go to Last U/D Library       S  <=- Scan download titles
   SN <=- Scan new files               SA <=- Scan new/all libraries
   Q  <=- Return to Main Menu          U  <=- Upload a file
   x  <=- Move to Library #x           OFF<=- Leave the system

=========================================================================

             ***** The Serial Port's Main Menu *****

<B>ulletin > System & Hacker       <D>octor ::> Ruth's Quote of the Day
<Z> :::::::> New Features,ect      <L>ogon :::> Increase Your Access
<1>0 ::::::> BBS Commandments      <O>ther :::> BBS Systems
<F>un :::::> On-Line Games!        <M>essage :> Center
<S>igs ::::> Special Int. Groups   <I>nfo ::::> System Information
<T>ransfer > Up/Down Loads         <U>tility :> Terminal Functions
<C>hat ::::> Summon Stu (sysop)    <W>ho's :::> Hot (User Status)

                ** Timex - Sinclair Sig **

<B>ulletin :> News from Les         <R>ead :::::> T/S Messages
<L>eave ::::> T/S Messages          <S>can :::::> T/S Headers
<D>ownload :> T/S Programs          <V>endors ::> T/S Equipment
<E>xit :::::> To Main Menu
```

***** Omni Net I(tm) *****
(718) 837-2881

> The First Menu <

<1>General Messages...
<2>Special Interest Boards...
<3>E-Mail - Private Messages...
<B>ulletins Section
<N>umbers of other BBS's
<M>erchandise Section
<U>tilities - Change Password, etc.
<X>pert User Level
<H>ow-long have I been on?
<T>erminate Call

> Timex/Sinclair SIG <

<*>Sinclair-Survival Column
<R>ead Messages
<L>eave Messages
<S>can Headers
<K>ill Messages
<X>pert User Level
<E>xit to Sigs Menu
<H>ow-Long have I been on?
<T>erminate Call
<Q>uick Logoff

SINCLAIR INFORMATION NETWORK

1) Welcome
2) Newsletter (QL Review)
3) Sinclair Flat Screen TV
4) Software Review
5) T/S 1000-1500 (ZX-81) tips
6) T/S 2068 tips
7) Icon Control on the QL
8) T/S related publications
9) T/S related BBS's
10) News on the Amstrad Sinclair deal
11) QL Window Demonstration Program

==========

WELCOME TO I.S.T.U.G.'s BBS
I.S.T.U.G.'s TIMEX-BOARD

<B>ulletins Updated 02-15-87
<C>hat
<G>oodby
<L>eave a Message
<O>ther BBS Numbers
<Q>uick Scan messages
<R>ead message
<T>ime on
<U>sers list

==========

=+= The NITE OWL SPECIAL BBS. =+=
MAIN COMMAND MENU

< B > = Bulletin Sub-Boards
< C > = Call Systems Operator
< E > = Edit Terminal Parameters
< F > = Send Feedback to Sysop
< G > = General Library (text) Files
< I > = Information On This BBS
< M > = Electronic mail Sub-system
< N > = Read Nite Owl News Files
< P > = Prog. Files (on-line games)
< PW> = Change your Password
< S > = Your Current Status
< T > = Time Information
< UD > = Uploading/Downloading
< UL> = Search User Log
< OFF or Q > = Leave the System

***** BILL'S OBSESSION BBS *****
(404) 377-2550

Main Menu Functions:

B)ulletin listing
E)nter message
G)oodbye
I)nitial welcome message
K)ill a message
O)perator page
Q)uick scan of messages
S)can messages
V)iew Conferences
C)omment for SYSOP
F)iles menu
H)elp
J)oin Conference
L)ine per page
P)ersonal mail
R)ead message(s)
U)tilities
X)pert menu

Conference Function <J>oin, <L>ist, <M>ain, <Q>uit, <X>pert
Available conference name:

1000 : TANDY 1000A EX & SX users share information and comments.
CLONEIT: Useful hints, tips and info about Hardware & Clones
EXPLORE: Share your hide-a-ways, trips, and restaurants
FANCY : Lets see what you can do with that ANSI program of yours.
FORUM : Public discussions on current events and pet peeves.
JOBS : Help & jobs wanted ads should be placed and read here.
P&L : Programmers and users interact on languages and software.
REVIEWS: Describe a favorite program that is in the downloads.
SHOPPER: Buy and sell ads for anything but your body.
TIMEX : ALL TIMEX USERS exchange information and chit-chat here.
VIDEO : video/film gab fest

***** TYLER TIMEX BBS *****
(214) 593-3331
SYSOP: Charles Stelding

Main Menu:

M>essage Base Bulletin
R>ead a Message
W>rite a Message
S>elect Message Base
C>hat with Sysop
U>pload a File
D>ownload a File
T>oggle Line Feeds
A>lter Line Length
G>oodbye (Logoff)

Message Base Menu:

A-General Interest
B-Timex Messages
C-Timex News & Reviews
D-Download List and Information
E-Leave private message to Sysop

***** LT-BBS TOP MENU *****
(805) 942-7301

<O>pen Forum Message Board
<T>rading Post, Classifieds
<R>ead All Message Boards
<H>elp section, the details
<C>hat with the sysop
<G>oodbye.....

<S>pecial Interest Boards
<E>lectronic Mailbox
<B>ulletins and INFO Center
<U>tilities, and more
<M>et DBS Passage

*** Timex Sub-Board ***

<1> Uploading with Timex
<3> Using MTERM
<L>eave a message
<K>ill a message
<D>ownload files

<2> Downloading with Timex
<R>ead messages
<Q>uick scan msg hdrs
<U>pload a file

The L O O N E Y B I N !
(619) 390-9470

The Looney Bin! Command Menu

A=7/8 bit or Atari ATASCII
B=Reprint Bulletins
C=Chat mode, page sysop
D=Data base system/BBS list
E=Email system
F=Files system (upload/download)
G or O=Goodbye/logoff
H=Help
L=Message to sysop
M=Message system
P=Your profile and status
S=Toggle clear screen for each display
T=Toggle connect time display
U=User log
+=Add to other BBS's list
*=Set line feeds/computer type
%=Change password
!=User Survey's
"OFF" at any prompt will log you off,"Menu" at any prompt = main menu
"Help" at any prompt, gives you some extra explainations of commands

Message Command Menu

A=Check for messages TO or FROM you
B=Check for messages FROM you
C=Check for messages TO you
D=Delete message
E=Enter message
F=Read FLAGGED messages
L=Locate and read (search) messages
M=Read MARKED messages
R=Read messages
S=Scan/Mark messages
W=Message editor Word Wrap toggle
@=Toggle continuous scroll on/off
O=Other message bases
Q=Quit to main menu
OFF=Logoff

RMG ENTERPRISES BBS
(503) 656-8072

NOTICE FIRST TIME USERS: BE SURE TO PRESS THE 'M' CHOICE IN EACH MESSAGE BASE AS THE BULLETIN CONTAINS IMPORTANT INFORMATION FOR ALL USERS.

Main Menu:

<M>essage Base Bulletin
<R>ead a Message
<W>rite a Message
<S>elect Message Base
<C>hat with Sysop
<U>pload a File
<D>ownload a file
<T>oggle Line Feed
<A>lter Line Length
<G>oodbye (Logoff)

Message Base Menu:

A> T/S GENERAL INTEREST
B> WEEKLY SPECIALS!
C> ORDER BLANK
D> 1000/1500 ZX-ERS ONLY
E> QL QORNER
F> 2068 PHREAKS!
G> CCAT/S NOTEBOOK
H> FD-68 FILES

Appendix C
MBBS Help Information

MBBS Help:

At the "MBBS Function?" prompt, enter one of the single letter commands listed in the main menu. After you enter your choice, you can either enter a return or a semi-colon (';'). If you enter a return, you will be prompted for the next data item (usually a message number (for R, S and Q functions), or subject (for the E function)). If you enter a semi-colon, you can "type-ahead" the data item(s) or next commands, avoiding the prompts and sub-menues for faster usage. Enter a return at the end of your single command or multiple command line.

Data items include message "numbers", Y/N (Yes/No) answers,message header variables and message lines. Message "numbers" (used by the R, Q and S commands) may be an actual message number, a number followed by a plus sign ("+") or the words NEW, MAIL, TAGGED (which can be abbreviated to N, M or T, respectively) or a search string surrounded by single quotes as in: 'find this string'.

All of these can also be used as data for the 'Q' and 'S' summary commands. The 'K' command will accept only numbers, the other commands do not use message numbers as data but prompt you for the needed information. A carriage return entered at any of the function submenus will return you to the main menu. Some questions are followed by a "default" answer shown enclosed in angle brackets (as in: "Message to? <ALL>?"). Entering a return in answer to one of these questions is the same as entering in the default value as your answer.

Commands and data may be strung together, separated by semi-colons.
(For example: R;121;43 read message # 121 & 43)

R;MAIL will let you read all messages addressed to you; R;NEW gets all new msgs since last log on; R;123+, (an example), retrieves msgs 123 and up; R;TAGGED will show messages 'tagged' during 'S' option scan. R;'search' will use 'search' as a search string for subject and address fields, retrieving msgs for which there is a match.

The 'A' function will disable the auto-return/word wrap functions used during message entry for people uploading messages with a terminal program. The 'M' function will disable the pauses ('[more]' messages) for folks capturing MBBS messages in a memory buffer or printing them.

Appendix D
Address List

Addresses and Phone Numbers of Vendors/Sysops Mentioned in the Guide:

AERCO
P.O. Box 18093
Austin, Texas 78760
512-451-5874
(FD-68 Disk Drive System, RS232 I/F, RP/M, Modem753 Term. Prog)

Barry Carter
Box 614
Warren, MI 48090
(Mterm II Manual)

Compuserve
P.O. Box 20212
5000 Arlington Centre Blvd.
Columbus, OH 43220
1-800-848-8199 (8:30am - 9:30pm)

Jack Dohany
390 Rutherford Ave.
Redwood City, CA 94061
415-367-7781
(QRL)

Richard Kelsch
Membrain Software
12244 Winter Garden Dr.
Lakeside, CA 92040
(Spiffy BBS)

MCI Mail
Box 1001
1900 M Street N.W.
Washington, D.C. 20036
1-800-624-2255 (9am-8pm M-Th)

Byte-Back
Rt 3
Box 147
Leesville, SC 29070
803-532-5812 (tech. help 7-9 pm EST)
(MD-2, MD-68, RS232 I/F)

Kurt Casby
25 Battle Creek Court
St. Paul, MN 55119
(Loader V, Casboard 2068)

Curry Computer
P.O. Box 5607
Glendale, AZ 85312-5607
602-978-2902
(Modapter, Avatex 1200, Letterwriter QCODE, QL hardware & software)

E. Arthur Brown
3404 Pawnee Drive
Alexandria, MN 56308
612-762-8847
(Casboard 2068, Loader V)

Grey & Clifford Computer Products
P.O. Box 2186
Inglewood, CA 90305
213-516-6648 (Technical)
213-759-7406 (Sale and info)
(2050 modem boards, Z-SI/O RS232 Cards Specterm 64, Avatex modems)

Norm Lehfeldt
757 Guerrero Street
San Francisco, CA 94110
(RLE decoder for QL)

Richard Moldovan
7414 E. Cuernavaca Pl.
Tucson, AZ 85701
602-298-8019
(QLTERM author)

Joe Newman
Variety Sales
325 W. Jersey St. #2D
Elizabeth, NJ 07202
201-289-5699
(Avatex modems, Loader V, QL)

American People Link
3215 N. Frontage Rd., Suite 1505
Arlington Heights, IL 60004
1-800-524-0100 (voice)
1-800-826-8855 (modem)

The Source
1616 Anderson Rd. Dept MD-60
McLean, VA 22102
1-800-336-3366 (voice)

Sunset Electronics
2254 Taraval St.
San Francisco, CA 94116
415-665-8330 (2050 modems, Mterm)

Weymil Corporation
Box 5904
Bellington, WA 98227-5904
(Mini-xmod software)

PC Pursuit
GTE Telenet Communications Corp.
12490 Sunrise Valley Drive
Reston, VA 22096
1-800-368-4215 (voice 8am-5pm EST M-F)
1-800-835-3001 (modem 24 hrs.)

G. Russell Electronics
Rd 1 Box 539
Centre Hall, PA 16829
814-364-1325
(QCODE, QL Hardware & Software)

Startext
P.O. Box 1870
Ft. Worth, TX 76101
817-877-1041

Time Designs Magazine
29722 Hult Rd.
Colton, OR 97017
(2050 RS232 & RLE articles)

Zebra Systems
78-06 Jamaica Ave.
Woodhaven, NY 11421
(2050 modem boards, Zterm 64)

-SYSOP AND CO-SYSOP ADDRESS LIST-

Bill's Obsession BBS
Co-Sysop Bret Lanius
1049 N. Carter Rd.
Decatur, GA 30030
404-284-2561

FWKUG BBS
Co-Sysop David Baulch
4424 Geddes Ave.
Ft. Worth, TX 76107
317-897-9225

I.S.T.U.G.
Sysop Willie Jones
10126 E. 33rd St.
Indianapolis, IN 46236

King's Market BBS
Co-Sysop Frank Holland
1423 S. Pearl St.
Denver, CO 80210
303-733-8103

Looney Bin BBS
Sysop Richard Kelsch
12244 Winter Garden Dr.
Lakeside, CA 92040-5540
619-443-7099

Night Owl Special BBS
Co-Sysop Gary Lessenbery
1885A Yorktown Ave.
Great Lakes, IL 60088
312-473-9415

RMG Enterprise BBS
Sysop Rod Gowen
1419 1/2 7th Street
Oregon City, OR 97045
503-655-7484

Serial Port BBS
Sysop Stuart Jackson
P.O. Box 54
Mt. Clemens, MI 48043

Timex Exchange BBS
Sysop Dave Clifford
13910 Halldale Ave.
Gardena, CA 90249
213-516-6648

Tyler Timex BBS
Sysop Charles Stelding
1415 South Baxter
Tyler, TX 75701

TSU BBS
Sysop Chris Raynak
5705 Lear Nagle Rd.
N. Ridgeville, OH 44039 216-327-8583

Appendix E
Files Available

```
                    ***** FWKUG TIMEX FILES *****

A2:TIMEX> (CR=Menu) Command? D

>>> Drive/User:  A2:  Files:  59   Space Used:  338K  (1746K  Free) <<<

-TIMEX  .A2  0K | GOLF    .TS  12K | ORDERFOR.TS   4K | SUPERCAL.TS   4K
3D-TECH .TS  4K | GRAPHICS.TS   6K | PLANNER .TS  10K | TANK    .TS   2K
ABM     .TS  2K | HEADSCAN.TS   4K | POLYSCRL.TS   8K | TAPECOPY.TS   2K
AUTODIAL.TS  2K | KEYBOARD.TS   2K | PSG     .TS   2K | TELELIST.TS   8K
BANNER  .TS  2K | MAILLIST.TS   6K | QBERT   .TS   8K | TSBBS   .TS  10K
BINARY  .TS  2K | MAP-RLE .TS   4K | RENUMBER.TS   4K | TYPE    .TS  12K
BOUNCE  .TS  2K | MENUGRAD.TS   6K | RLE     .TS   2K | TYPE64  .TS  12K
BREAKOUT.TS  4K | MONITOR .TS   6K | RLE-MC  .TS   2K | VARS-ADD.TS   2K
CASSDIR .TS  6K | MORTGAGE.TS   2K | RLEPRO  .DOC  2K | WALKER  .TS   6K
CODEMOVE.TS  2K | MT-AERCO.TS   4K | RLEPRO  .TS   2K | WEATHER .TS  10K
DATACREA.TTS 2K | MUSIC   .TS  14K | RLEPRO  .TXT  4K | WHATSFOR.TS  10K
DATAGEN .TS  2K | NEWS1&2 .TS  28K | RLEUPL  .TS   2K | WHATSNEW.COM  2K
DATALOAD.TS  2K | NEWSLTR3.TS  14K | SENDVARS.TS   2K | WORDWRAP.TS   2K
DISASSY .TS  4K | NITIME1 .TXT 16K | STARWARS.TS   4K | WXCAST  .SPX 10K
FUDGE   .TS 24K | NITIME2 .TXT  4K | STM     .TS   2K |
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                ***** THE NITE OWL SPECIAL BBS *****
                        FILE TRANSFER AREA
                      TIMEX/SINCLAIR  PROGRAMS
                          (Data Base II)

                        DATA BASE SUMMARY:
                        ==================
                      25 files/1451 blocks free.

#  1: "AUTOSCAN,p"  5 blocks          #  2: "roladex.tsx,p"  27 blocks
#  3: "addressbook-doc,s"  3 blocks   #  4: "Snickers,p"  35 blocks
#  5: "Biorhythms,p"  8 blocks        #  6: "CALENDAR.TS1000,p" 5 blocks
#  7: "HBANNER.TS1000,p"  3 blocks    #  8: "PIECHART.1000,p"  16 blocks
#  9: "DIS-Z.TS1000,p"  39 blocks     # 10: "Lottery,p"  8 blocks
# 11: "QBERT,p"  28 blocks            # 12: "ADDRESSBOOK,p"  34 blocks
# 13: "Mastermind,p"  9 blocks        # 14: "Fortress,p"  16 blocks
# 15: "Trapeziod,p"  3 blocks         # 16: "64col,p"  8 blocks
# 17: "M-linreg,p"  11 blocks         # 18: "days,p"  3 blocks
# 19: "Charts,p"  4 blocks            # 20: "Sim,p"  8 blocks
# 21: "optport,p"  9 blocks           # 22: "moav,p"  9 blocks
# 23: "TSFEST.TXT,s"  25 blocks       # 24: "BUDGET.JLO,p"  33 blocks
# 25: "BUDGET.BAS,p"  33 blocks
```

***** TIMEXCHANGE BBS *****
FILE SECTION

Drive A2: files: 69 space used: 596k (1196k free)

-READ	.ME	4k	-SPECTRM.	---	0k	2068MON	.TSX	20k	AJ-BBS	.TSX	16k
ART-INT	.SPX	16k	BARCHART.	SPX	4k	BYTEBACK.	ASM	4k	BYTEBACK.	DOC	4k
BYTEBACK.	TSX	4k	BYTEMAP	.TSX	8k	CALENDAR.	SPX	4k	CHARGEN	.SPX	8k
CONV	.TSX	4k	DECAY	.SPX	4k	DISASM	.SPX	12k	DOCTOR	.SPX	24k
E-CAD	.SPX	24k	EXPERT	.SPX	4k	FRACTALS.	SPX	8k	GPGP	.TSX	8k
GRAPH	.SPX	4k	GRAPH-3D.	SPX	4k	HANSHAN	.SPX	4k	LCMJLO	.SPX	4k
LD2050V4.	SPX	4k	MASTER	.SPX	4k	MDCAT	.DOC	4k	MDCAT	.TSX	4k
MINIBBS	.DOC	4k	MINIBBS	.SPX	12k	MINUET	.SPX	20k	MINUET	.TSX	20k
MONITOR	.TSX	20k	PAINTER	.SPX	4k	PARABOLA.	SPX	4k	PCP-DIAL.	TSX	4k
PICASSO	.SPX	4k	PIX-FIX	.TSX	12k	PLOTD1	.SPX	4k	PLOTD2	.SPX	8k
QRL	.LBR	8k	QUILTY	.SPX	4k	RENUMBER.	TSX	4k	RLEMASTR.	LBR	16k
RLEPRO	.LBR	20k	SAMURAI	.SPX	4k	SHRINK	.SPX	8k	SNICKERS.	SPX	12k
SP64FIX	.SPX	4k	SP64FIX	.TXT	8k	SPANISH	.TSX	20k	SPECOVL3.	LBR	4k
SPELL-1	.SPX	12k	SPELL-2	.SPX	12k	SPXSCRN$.	LBR	16k	STATS	.SPX	28k
SYLLOGY	.SPX	24k	TIGER	.SPX	4k	TS-80	.SPX	4k	WIGWAM	.SPX	4k
WS-2000	.ASM	4k	WS-2000	.DOC	4k	WS-2000	.TSX	4k	XROM-RAM.	LBR	4k
Z-TCODE	.ASM	8k	Z-TCODE	.DOC	8k	Z-TCODE	.HEX	4k	ZTERMTST.	TSX	12k

Drive B1: files: 4 space used: 60k (1004k free)

README	.NOW	4k	TS/1000.		0k	TS1000	.LBR	52k	XEROX-15.	LST	4k

Drive B2: files: 85 space used: 636k (1004k free)

README	.NOW	4k	-TS/2068.		0k	A&J+MTRM.	TS	8k	AD2050ZX.	DOC	4k
AD2050ZX.	TS	8k	AUTODIAL.	TS	8k	BIOGRAPH.	TS	24k	BLOCK	.TSS	4k
COMLLIST.	DOC	4k	COMP-INT.	TS	8k	CRASHER	.DOC	4k	CRASHER	.TS	8k
DAY-91	.TS	4k	DIGIT	.DOC	4k	DIGIT	.TS	12k	DK-PRINT.	TS	4k
DRAW	.TS	8k	DUMPWIDE.	DOC	4k	DUMPWIDE.	FIX	4k	DUMPWIDE.	TS	4k
GOLFING	.TS	4k	HDSCANZX.	DOC	4k	HDSCANZX.	TS	4k	HEADSCAN.	DOC	4k
HEADSCAN.	TS	8k	HUNCHY	.TS	20k	LABELS	.TS	8k	LOTTO	.DOC	4k
LOTTO	.TS	4k	MC-BREAK.	TS	4k	MCTRACE2.	TSS	8k	MORTGAGE.	TS	12k
MT-AERCO.	DOC	4k	MT-AERCO.	TS	8k	ONLINE	.TXT	8k	PEEKER	.TS	4k
PRINTMII.	DOC	4k	PRINTMII.	TS	4k	QBERT	.TS	16k	RENUM	.TS	12k
RENUM	.TSS	12k	RLEPRO	.DOC	4k	RLEPRO	.TS	4k	RLEPRO	.TXT	4k
RLEUPL	.TS	4k	ROLODEX	.TS	16k	SENDVARS.	TS	4k	SIGNALS	.TS	16k
SIMON	.DOC	4k	SIMON	.TS	4k	SLOT	.TS	12k	SQUARE	.TS	4k
STARWARS.	TS	8k	STM	.TS	4k	SUPRCALC.	TS	4k	SUPRCHEK.	DOC	4k
SUPRCHEK.	TS	8k	SUPRFILE.	DOC	4k	SUPRFILE.	TS	24k	TAPECOPY.	DOC	4k
TAPECOPY.	TS	4k	TAPECPY	.TS	4k	TAPELBL	.DOC	4k	TAPELBL	.TS	8k
TRACE	.TS	12k	TRACE	.TSS	8k	TRACE2	.TSS	12k	TSBBS	.DOC	4k
TSBBS	.TS	20k	TYPE	.TS	24k	UL-PBBS	.DOC	4k	UL-PBBS	.TS	4k
USR	.DOC	4k	USR	.TS	12k	UTILITY4.	REM	4k	VCALC+	.DOC	8k
VCALC+	.TS	8k	VCALC+2	.DOC	12k	VCALC+2	.FIX	4k	VCALC+2	.TS	8k
WALKER	.TS	12k	WEATHER	.DOC	4k	WEATHER	.TS	20k	Z-PRINT	.DOC	4k
Z-PRINT	.TS	8k									

Drive D2: files: 15 space used: 92k (932k free)

-TIMEX-	.	0k	ARTICLE	.TXT	12k	GROUPS	.COM	8k	HELP2068.	TXT	4k
MTRMMS	.TXT	4k	OLDFEST	.TXT	4k	ONLINE	.TXT	8k	QL-NEWS	.TXT	4k
QLREVIEW.	TXT	12k	RLEPRO	.TXT	4k	S-COPY	.INF	4k	SURVEY	.TXT	4k
TASWORD	.INF	12k	TELCOM	.INF	8k	TSFEST	.TXT	4k			

Drive D4: files: 11 space used: 56k (932k free)

-THE-QL-.		0K:	DARTS	.BAS	8k:	QCOPY115.	BAS	4k	STARBOOT.	BAS	4k
CALENDER.	BAS	8k:	QCOPY10	.BAS	4k:	RLE	.BAS	4k	STARPORT.	BIN	12k
CBOOT	.BAS	4k	QCOPY11	.BAS	4k:	RLE	.BIN	4k			

***** TSU TIMEX FILE SECTION *****

Volume:	TSU	D2			Directory:	MAIN		
PRODUCTS	TEX	1280	2-07-87	3:02p	UPDATE	TEX	12032	2-09-87 5:52
FEST1	TEX	4608	1-06-86	11:13p	TSUPDATE	TEX	6272	1-22-87 9:47
BBCGAPPL	TEX	1920	2-09-87	10:23p	BBSFEB87	TEX	11904	3-03-87 12:43

Volume:	TSU	D3			Directory:	MAIN		
BBSCFIX	268	5632	10-07-85	4:37p	GPGP	268	5632	8-23-86 7:49
RELMCDOC	268	4224	10-07-85	5:17p	BYTEMAP	268	6272	9-28-86 12:12
CHLGRRLE	268	5376	10-07-85	5:19p	SPOCKRLE	268	13056	10-07-85 5:20
DENUVRLE	268	6656	10-07-85	5:23p	RLEMASTR	268	2432	10-07-85 5:18
MENU	268	768	11-05-86	10:07a	CHARLIE	268	7040	12-19-86 3:22
WILL	268	7040	11-09-86	8:24a	CALENDAR	268	4480	10-26-86 9:00
HRH	268	7040	12-25-86	5:23p	DALLASRL	268	7040	3-05-87 6:00
WCFRLE	268	6656	3-03-87	10:44a	FAYERLE	268	5376	3-02-87 1:26

Volume:	TSU	D3			Directory:	MAIN		
CBOOT	QL	3712	1-13-87	7:05p	QCOPY1	QL	2816	1-13-87 7:07
QCOPY1_1	QL	1536	1-13-87	7:09p	QCOPY115	QL	1536	1-13-87 7:10
CALENDAR	QL	6528	1-13-87	10:08p	QCOPY1_2	QL	1408	1-13-87 7:12
QTHELLO	QL	7168	2-06-87	12:19a	QTHOTXT	QL	3072	2-07-87 1:28

********* LTBBS Timex/Sinclair Library *********

MINUET-MUSIC	17280	XMODEM version. Excellentcomposition! (3-12-87)
QBERT.HEX	14733	HEX version. Exatly like the arcade game (3-09-87)
QBERT.TSX	7040	XMODEM version. Exatly like arcade game! (3-09-87)
HEXHUNCHY	18934	HEX version of hunchy! Have to get this! (3-08-87)
HUNCHY	9216	XMODEM version. A great little adventure (3-07-87)
DISPLAY64.XM	2176	XMODEM version of 64 coulumn display PG! (3-07-87)
64COLUMNDISY	4346	HEX Version. Prints in basic 64 columns! (3-07-87)
TSBBS.TSX	9088	XMODEM version of TSBBS (3-07-87)
TSBBS.BAS	18610	HEX version of BBS program. (3-07-87)
TSBBS.DOC	2414	Text file for TSBBS. Shows how to use. (3-07-87)
TSFEST.TXT	7150	The Timex/Sinclail Computer Fest (3-06-87)
MUSIC2	8062	Hex Version of MISICMAN! (2-26-87)
MUSICMAN	3968	Demo of Sinclair PSG capabilities!!! (2-26-87)
MUSICIAN	3968	Demo of the Sinclair PSG capabilities!!! (2-26-87)
POKER	11558	Play draw poker versus the computer. (2-22-87)
MUSICA	8035	Demo of the Timex PSG capabilities! (2-19-87)
SKYLINE	6656	Description lost, or not recieved (11-13-86)
JOTTO.BAS	9728	Guess the five letter word (9-29-86)
ESCAPE.BAS	10752	Get them first, or else!! (9-29-86)
TENNIS	8192	Tennis singles (9-29-86)
GOLF	13312	18 holes, 72 par!! (9-29-86)
21	25088	Blackjack, 1-6 players, Vegas rules (9-29-86)
AMORTIZE	4608	Loan Amortization program (10-03-86)
SUN.BAS	23552	figures sunrise/sunset times, global (9-29-86)
BANNERPRINT	6528	Print ASCII files on your printer (9-28-86)
TVRO.BAS	4608	Satellite Reciever Design/examples (10-16-86)
STARTREK.DOC	18944	Documentation for Startrek.bas (9-30-86)
STARTREK.BAS	42496	Intellectual Startrek game (9-30-86)

DL 12 - TS 2068/SPECTRUM

TSGUID.TXT/binary
MINUET.XMD/binary
HEARTS/binary
MINDBU.XMD/binary
MEX.COM/binary
QRL.BIN/binary
MONMAN.TXT
CIRCUI.BAS
MODEM.TXT
RLEFSC.PRO/binary
TUTOR2.HEX
RLEUPL.TXT
RLEPRO/binary
ACIA.TXT
CHECKB
DBLDUM.BIN/binary
TSTINY.DOC
UNLOAD.COD
FLOWCO.HEX
COMPAR
2050
2050BA
TASTE.RM
GMISS.68
AUTO20.50

LIFEIN.XMD/binary
ALIENS.XMD/binary
3DTICT.XMD/binary
TSFEST.TXT
BBSFD6.XMD/binary
QRL.BAS/binary
MONMAN.XMO
MONITO.BAS
ROCKNR.XMD/binary
CHAOS/binary
RLE-UP.HEX
RLEPRO.HEX
BBS
TSACIA.TXT
MTBUFT
TINYBB
KNIGHT.68
2050.XON
SCREEN
DOCS
REPEAT
BFPNT.MC
SEND
DARKEN.ULT
CLONE.HEX

HALJCH.BIN/binary
SPECTR.NEW
BLOCKM.XMD/binary
DBOOT.HEX
QRL.DOC
JAPAN.ART/rle
FLSDEC.RLE
UTILIT.BAS
BOOT.FDA
GIBERI
RLEUP.XM8/binary
PICDOC
TSBBS-/binary
AUTO.206
DBLDUM
TSTINY.BAS
UNLOAD.BAS
BABYBO.X68
TREE.68
JINGLE.68
MODEM
MTIPS
MTERM.DLD
SQUASH.GAM

DL 6 - QL

HARDDI.BAS
PLDMNU.BIN/binary
PLDMNU.DOC
HEXASC.BAS
MANDEL.BAS
QUANTA.INF
TRIVIA
QLOGO.BAS
SIZBSE.DOC
SIZBSE.BAS
ATTACK.BIN/binary
QLSFX.BAS
QLUPDO.TXT
TIC.BAS
TEMPR.BAS
KING.BAS
CODEBS.BAS
LISTER.BAS
DECOD.RLE
QLUP.TXT
NETWK.BAS

SQUEEZ.BAS
PLDMNU.ASC
DARTS.BAS
SKYBUR.BAS
STARLO.BAS
PAY.BAS
MAZE.BAS
TSFEST.TXT
TIMER.EXE/binary
QLCLOC.DOC
SLOT.BAS
TIMESE.BAS
WORM.BAS/binary
MENU.BAS
BASBAL
CADQL.BAS
DAYS.BAS
QLBERT.BAS
PAPER.DEM
HAMRUL
NETWK.DOC

CGP115.BAS
PLDMNU.BAS
BACH.ASC
BOOT
STARPO.BAS
QUIZ
MODES.BAS
POWER.TXT
KEYMEM.BAS
QLCLOC.RLE/rle
SFX.BIN/binary
QL
RLE.BIN/binary
BACH.MUS/binary
PR.SUB
TRIG.BAS
LOTTO.BAS
QLTERM.DOC
QLDOWN.TXT
MARQUE
QLXCOD.BAS

QLXMOD.BAS
DRUNUD.DOC
QLXMOD.COD/binary
FONT
LUNAR.BAS
8510.HLP
MANDAL.BAS
MATH.TST
QTHELL.GAM
FORMAT.ER2

QLTERM.15
DISK.MGR
SEDV.TST/binary
UDG
QTHELO.HEX
8510.PRF
EFFECT.DMO
WINDEM.PRG
WINDOW.DEM
BABYBX

TERM.PCB/binary
CAL.TKT
MCAT.PRO/binary
JRTYPE.BAS
QTHELO.LOD
BMW.BAS
MUSIC.DMO
MUSIC.QL
MINER.SIM

DL 4 - TS 1000/1500

BOUNCE.TXT
SCRNSC.TX1
SOAP.GAM
COMUPL.OAD
FLIP.PRO
LOVE.PRO
HAMRUL.GAM

BATTLE/binary
SCRNSC.ROL/binary
CODE.MON
ADDRES.ULT
HIRES.PRO
BKDEL.UTI
HANGMA

BLACKJK/binary
COMPDW.NLD
ADDRES.LST
TWIST
MCOD.PRO
SCROLL.DEM

The Belden Hill Users Bulletion Board System (B.U.B.B.S.)

]}========] FILE DIRECTORY FOR THE ... TIMEX FAMILY [==========

3DPICS.BAS	2176	01-25-87	3d graphics xmodem
3DWORDS.BAS	7680	10-30-86	Prints 3D words to ZX printer- Timex-Xmdm
BANNER3.BAS	768	11-05-86	Banner maker for 2040 printer Timex-Xmodem
BILLBOARD.BAS	640	10-31-86	Makes marquee type messages Timex-xmodem
BIORTMS.BAS	1024	11-07-86	Biorythms program for Timex-Xmodem
BLLTWR.BAS	15744	02-01-87	Haunted Belltower-arcade game Xmodem
BOLDPRNT.BAS	1024	10-28-86	Prints in bold mode for Timex with Xmodem
CHECKBAL.BAS	2048	10-19-86	Checkbook balancer for Timex with Xmodem
DOODLJOY.BAS	1024	01-17-87	Draws with left joystick-Timex-Xmodem
GOLF.BAS	1152	11-08-86	Golf game for Timex 2068-Xmodem
HANGCAT.BAS	1408	10-23-86	Word game for Timex-Xmodem
LFINSEST.BAS	3456	10-21-86	Life Insurance Estimator for Timex-Xmodem
LODERVRV.TXT	4864	11-02-86	A review of Casby's Loader V comm. Prog.T/S
MATHPROB.BAS	2048	11-12-86	Math practice for kids - Timex- Xmodem
PICTURE.BAS	6912	10-23-86	Picture test Upload for Timex -Xmodem
PIECHART.BAS	896	01-23-87	Pie Chart-up to 18 divisions -TimXdm
PIGPICKS.BAS	768	01-09-87	Football prediction program Timex-Xmodem
PRTPATCH.DOC	2944	11-06-86	Patch MTERM for Centronics printer..DWS
RLEDENUV.BYT	5248	11-14-86	RLE Pic of Catherine Deneuve- See Doc
RLEMASTR.DOC	4352	11-12-86	Documantation for RLEMASTR.BYT- MC ver.
RLEMASTR.BYT	2432	11-13-86	MC vers. of RLE graphics software-TimXdm
RLEOJONS.BYT	4096	12-16-86	PLE pic - Oliver Jones- see RLE doc
RLEOPART.BYT	13184	11-23-86	RLE pic -'Optical Art'-Xmodem see RLE doc
RLERACLR.BYT	2560	11-20-86	RLE of a racing car-see RLE doc-Xmodem
SHOOTSCR.BAS	384	12-02-86	Shoots characters onto screen-TimXdm
TAPEANLY.BAS	1280	01-19-87	Reads tapes in Spectrum mode- 2068 & Spec
TICTACTO.BAS	8832	10-31-86	Traditional game for Times- Xmd.
TIMEX	14848	11-16-86	NOV/DEC SINCUS NEWS
TSGUIDRV.TXT	5760	12-31-86	Review of 'Guide to T/S Telecommunicat.'
TSNEWS.TXT	11904	01-25-87	Jan/Feb SINCUSNEWS Mscript file Xmod

******* BILL'S OBSESSION BBS ******

PROGNAME.EXT	SIZE	PROGNAME DESCRIPTION
RLEMASTR.TSX		The MC version of the RLE decode/encode software.(fast!)
RLEMSDOC.TSX		Documentation for the above
CHLGRRLE.TSX	5376	
CHLGRRLE.HEX		Challenger/STS-6 LOGO
SPOCKRLE.TSX	13056	Startrek's "Mr. Spock"
DENUVRLE.TSX	6656	
DENUVRLE.HEX		Actress Catherine DeNeuve
SNOOPY.TSX	2432	LLIST to 80 col Printer
SPECTERM.TXT	4608	From Ed Grey's newsletter
TDB.TSX	13696	
TDB.HEX	27685	TRANSACTION DATA BASE
TDBDOC.DOC	1625	
TDBDOC.TXT	1639	INSTRUCTIONS FOR TDB
WAKE.TSX	3200	Gives a wake up call with 2050!

******* OWEGO FREE ACADEMY TIMEX PROGRAMS *******

Name	Size	Date	Description
PIECHART.BAS	896	03-01-87	Pie chart with up to 18 divisions-Xmodm
PIGPICKS.BAS	768	03-01-87	Football prediction program for - Xmodm
TAPEANLY.BAS	1280	02-19-87	Reads tapes in Spectrum mode & 2068
BUSTER.BAS	5760	02-17-87	Good minefield game for Timex - Xmodem
MOTION.BAS	8832	02-13-87	Animation in BASIC for T/S 2068-Xmodem
TSGUIDRV.TXT	5760	02-08-87	Review of 'Guide to T/S Telecom. Users'
TSFEST.TXT	6230	01-21-87	Info on festival for Sinclair users
TICTAC2.BAS	9088	11-27-86	Traditional game for Timex - Xmodem
LFINSEST.BAS	3456	11-21-86	Life Insurance Estimator Timex-Xmodm
GOLF.BAS	1152	11-11-86	Golf game for Timex with Xmodem
HANGCAT.BAS	1408	11-11-86	Word game for the Timex 2068 - Xmodem
CERTMKR.BTS	1538	04-29-86	Makes certificates with ZX printer
3DWORDS.BTS	15344	04-21-86	Prints 3D Words with ZX Printer
DOODLEJO	1966	03-27-86	DRAWING PROGRAM with JOYSTICK
GRDBK.BTS	7424	02-23-86	A GRADEBOOK FOR TEACHERS
MTERM.TAS	128	09-14-85	ALTER MTERM TO USE AERCO CENT. I/F
BUFFUTL.BTS	8576	08-07-85	BASIC PROGRAM FOR MTERM TEXT PRINTING
BUFFUTL.LST	4096	08-07-85	BASIC LISTING FOR BUFFUTL.BAS PROGRAM
COMPRINT.DOC	2560	08-07-85	LLIST AND LPRINT DATA SENT TO MODEM
PRTPATCH.DOC	2688	08-06-85	
TASTERM.DOC	5760	08-06-85	TIMEX MTERM BUFFER TEXT FROM TASWORD 2
TICTACTO.BTS	17734	10-02-80	GAME for TIMEX directory
BIORTMS.BTS	1887	10-01-80	Biorhythms program

******* BILL'S OBSESSION BBS *******
TIMEX 2068 DOWNLOADS

STANDARD MTERM ASCII MAY BE USED TO DOWNLOAD .HEX, .TXT & .DOC FILES (.HEX & .TXT HAVE BUFFER CONTROL BUILT IN.). LOADER V MAY BE USED FOR .TSX & .DOC FILES, ALSO .SPX FILES BUT THEY WILL NOT BE FULLY COMPATIBLE WITH LOADER V. SPECTERM 64 IS USED FOR ANY FILE THAT HAS A .DOC OR .SPX ALSO .TSX FILES BUT THEY WILL NOT BE FULLY COMPATIBLE WITH SPECTERM 64

PROGNAME.EXT	SIZE	PROGNAME DESCRIPTION
64COL.TSX	7296	MERGE WITH YOUR PROGRAMS TO HAVE 64 COL
64COL.HEX	14585	DISPLAY
ACOUNT.TSX	5120	
ACOUNT.HEX	10047	ACCOUNTING PROGRAM
ATTACK.TSX	16512	GAME FOR 2068 from T.S.U.G.
BREAKOUT.TSX		
BREAKOUT.HEX	5438	NICE COLOR BREAKOUT GAME
BUSTER.TSX	5760	
BUSTER.HEX	11440	Game for 2068 uses right joy-stick
CHALICE.DOC	773	
CHA.HEX	30685	
LICE.HEX	36350	
CHUNKS.TXT	4163	PART OF NEWSLETTER SENT BY DAVID HILL
DBOOT1.HEX	9265	A basic Boot utility for FD-68 users
DIS.TSX	6656	Basic Disassembler
GPGP.TSX	5632	Graphing program by James Dupuy
GRAPHICS.DOC		
GRAPHDOC.TXT	2164	INSTRUCTIONS FOR GRAPHICS
GRAPHICS.TSX	7552	
GRAPHICS.HEX	15318	USER DEFINED GRAPHICS UTIL
JBBS.TSX	14848	mod. tinyboard A&J microdrives
HEADER.HEX	2547	
HEADER.TSX	1280	READ HEADERS FROM TAPE FILES
KEYBOARD.TSX	2560	
KEYBOARD.HEX	5125	FAST ACTION KEYBOARD GAME
LFEINSES.TSX	3456	LIFE INSURANCE PROGRAM
LLS.HEX	3397	LUNAR LANDER SYMULATION
MINE_F.HEX	1734	GET THROUGH THE MINFIELD
MORSE.TSX	2816	
MORSE.HEX		Learn Morse Code on 2068
MONITER.TSX	17920	Machine code moniter
NTINY.TSX	9088	
NTINY.HEX	18176	MINI BBS FOR 2068/2050
PICDOC.TSX	1792	
PIXFIX.TSX	9088	AS SEEN IN SYNCWARE NEWS
RECTANGL.TSX	1152	
RECTANGL.HEX	2073	DRAW RECTANGLES TO POINTS
RENUMBER.TSX	2176	YOU GUESSED IT!
TONEDIAL.HEX	2816	dial with Touch tone phones. NO MODEM!

(Continued on the next page...)

***** TYLER TIMEX BBS TIMEX FILES *****

See Bulletin Message in Section D for more information.

A-Meteor 18k	B-Pix Fix 9k	C-Centipede 3k
D-Renumber 2k	E-T Data Base 15k	F-2068 Monitor
G-64Column 2k	H-BADNEWS.PCP 12k(text)	I-HUNCHY 9k

***** SERIAL PORT BBS ****
TIMEX FILE SECTION

FILE	SIZE	DESCRIPTION
BASIC.COM	24320	mbasic clone, for cpm aerco
64COLUMN	3735	another basic 64 coloumn routine-2068
CHAMBERS	9600	basic adventure for 2068
BYTE-MAP	6272	nice scroll routine, check out DEMOS
PPIP12	49152	improvement to pip(lbr file)
ZM-DISK	768	Ram Disk for C/PM
AERCONEW.DOC	1041	DOCUMENTATION on AERCO-NEW
AERCO-NEW	1152	A M/C routine to enable chunk 0 on NEW
BANNER.BAS	768	2040 BANNER PRINTER FOR TS100(A BIT SLOW
ROBOT-ATTACK	6528	space invaders type game for 2068
BEATLES.BAS	16384	music demo for the 2068 (3 channles)
HOME.LBR	49664	a home library catolog file for C/PM
BANKS.DOC	996	Copies operating system to all banks
BANKS	1920	AERCO DD SHADOW BANK UTILITY for 256K
VARS	2944	M/C Memory management for timex
VARS.DOC	673	AERCO DD UTILITY, shows memory and chnks
BOOT2.DOC	1464	documantaiton to boot2.bas
BOOT2.BAS	1280	improvement to boot.bas(works with OS-64
64COL.DOC	182	documentation to64col.bas
64COL.BAS	7296	basic 64 coloums for 2068(merge with bas
BUSTER.BAS	5760	2068 basic game for left joystick
BOOTBAS.DOC	293	Documintation for Boot.BAS
BOOT.BAS	640	nice aerco auto boot directory
GPGP.BAS	5632	Graphing program for 2068
MORSE.BAS	2816	learn morse code on the 2068
BREAKOUT.BAS	2944	2068 basic breakout game
D7	4096	better C/PM directory than DIR.COM
TREK	27392	startek adventure for C/PM
MODEM753	10368	latest mods to mode7 (R/PM and 2050)
RLEDOC.BAS	10985	Doc. for rlemastr(read with mterm buffer
RLEMASTR.BAS	2432	decodes RLE graphics (prints to screen)
XMAS-LABEL	9088	2068 and epson christmass label printer
LANDER	1920	LANDER GAME FOR TS1000
TINYBBS.XMDM	9088	basic BBS program for 2068. needs 2050
CHECK.XMODEM	4864	CHECK BOOK BALANCER FOR TS1000
SPR.HEX	2200	prints specific range(fuel mialage) for
BANNER2	3072	prints banners on 2040 (xmodem)
COVER	12160	TS1000/PRINTS COVERS FOR TAPE BOXES
NAVLOG	4224	TS2068/PRINTS A NAV LOG FOR AIRPLANES
DIRPRINT	640	TS1000/PRNT A MIKRODRIVE TAPE DIRECTORY
BBS.DOC	2811	2068:DIRECTIONS FOR TINBBS
WAKE	3275	2068:WAKES YOU UP AT PRESELECTED TIME.

Appendix F
Pay Systems

Startext - Requires a flat monthly charge of $9.95 per month. Payment must be made in advance on a quarterly basis. The fees provide for unlimited access, and it can be utilized through PC Pursuit.

American People Link - Accepts credit card or check. Initial sign-up fee of $15 required and a monthly subscription fee of $10. Two sign-up plans are available - regular and Frequent plinker club. Hours of operation are:

Supersave Hours (SuperSaver Rates in effect)
Weeknights: 6:01 pm to 8:00 pm Monday through Friday
Weekends: 8:01 am to 8:00 pm Saturday and Sunday

Leisure Hours (Leisure Rates in effect)
Weeknights: 8:01 pm to 7:00 am Monday through Friday
Weekends: 8:01 pm to 7:00 am Saturday and Sunday

Business Hours (Prime Rates in effect)
Weekdays: 7:01 am to 6:00 pm Monday through Friday

Note: Hours shown are all based on local time at point of access.

Rates vary depending on the plan (ie. regular or frequent plinker) and are as follows:

	Frequent Plinker	Regular
SuperSaver		
300 Baud	$ 2.96/hr	$ 3.95/hr
1200 Baud	$ 3.71/hr	$ 4.95/hr
2400 Baud	$ 8.96/hr	$11.95/hr
Leisure		
300 Baud	$ 3.71/hr	$ 4.95/hr
1200 Baud	$ 3.71/hr	$ 4.95/hr
2400 Baud	$ 8.96/hr	$11.95/hr
Prime		
300 Baud	$ 8.96/hr	$11.95/hr
1200 Baud	$ 9.71/hr	$12.95/hr
2400 Baud	$11.21/hr	$14.95/hr

PC Pursuit - Currently credit card payment only, provisions to pay by check may be implemented in the future. One time registration fee of $25 and $25 flat fee per month after that. No additional fees charged during evenings and weekends. An additional fee $10.50-$14.50 charged for daytime usage.

Compuserve - Accepts credit card or Checkfree payments. Starter kit required (retail price - $39.95 however, shopping around can find the price anywhere from $12 - 29. Also, purchase of the Avatex 1200 modem includes a complementary password and ID). Current rates:

	8:00 am - 6:00 pm	6:00 pm - 8:00 am
300 Baud	$ 12.50/hr	$ 6.00/hr
1200 Baud	$ 15.00/hr	$ 12.50/hr
2400 Baud	$ 15.00/hr	$ 12.50/hr

Source - Accepts credit card or electronic check transfer. Starter kit required (retail price - $49.95 + $3 S/H which includes extensive manual). There is a minimum monthly fee of $10. Current rates:

	7:00 am - 6:00 pm	6:00 pm - 7:00 am
300 Baud	$ 21.60/hr	$ 8.40/hr
1200 Baud	$ 25.80/hr	$ 10.80/hr
2400 Baud	$ 27.60/hr	$ 12.00/hr

Rates for Special Interest Group Section

300 Baud	$ 10.80/hr	$ 6.00/hr
1200 Baud	$ 13.80/hr	$ 7.80/hr
2400 Baud	$ 15.00/hr	$ 9.00/hr

MCI Mail - Accepts credit card and electronic check transfer. There is a yearly fee of $18. The first $18 applies toward charges for messages. A message costs 45 cents for the 1st 500 characters, $1 for messages up to 7500 characters and an additional $1 for each additional 7500 characters. Also available is a hardcopy service which allows you to send an electronic message overseas (eg. U.K.), have it printed there and either dropped into the local mail or delivered by an employee of MCI Mail. Dropped in the local mail (which I call an "International Letter") method costs $5.50. The second option, delivered in person, is called "International Courier" and can range anywhere from $12-30 depending on the country. The same service is available domestically with the following rates: dropped in the mail charge is $2, and delivered by courier overnight is $8. Access to the system is free from over 50 major cities, however it is also available from many other locations at 15 cents/minute.

Appendix G
Hardware Projects & QL RLE Decoder

A. HOW TO CONVERT A BYTE-BACK MODEM TO RUN AT 1200 BPS (FOR I/F PURPOSES ONLY)
NOTE: This information is courtesy of Bruce Taylor of Budget Robotics. He has a working model.

1) Cut the trace leading to pin 8 of U6
2) Connect this trace to Pin 11 of U6 (This increases the speed by 8x to 2400 BPS)
3) Cut the trace leading to Pin 4 of U6
4) Connect this trace to Pin 5 of U6 (This cuts the speed in half to 1200 BPS)

Bruce's version includes a series of Micro switches that allow him to choose between 75,150,300,600,1200,2400, or 4800 BPS. If you wanted you could use this new interface for a modem (rather than a printer). You would have to connect the RXD (receive line). Do this by putting a jumper from Pin 3 of U8 to Pins 9 & 10 of U12. (This last modification has not been tested by Bruce since he had no need for a 1200 BPS I/F driving a modem.

B. MODAPTOR (QL MODEM CONNECTION)

This is a small box with an RS 232C connector on one end and a DB-9 connector on the other. It plugs into the QL serial port #2 and allows for connecting any standard Hayes compatible modem (using a DB-9 connector). Rob Curry of Curry Computers says it MUST be used for 300 BPS modems.

C. CONVERTING A MD-2 TO AND MD-68

If you have a Byte-Back MD-2 modem and want to upgrade to an MD-68, there is a kit available from Byte-Back for that purpose. It is fairly simple to install. Bruce Taylor has installed his in such a way that he could switch back and forth from one to the other.

D. QL RLE Decoder Program (Courtesy of Norm Lehfeldt)

```
00 GO TO 220:REMark MODE 4 RLE Decoder by Norm Lehfeldt 4/17/87
10 B=CODE(INKEY$(#4,30))-32:IF B<0 OR EOF(#4):GO TO 190
20 C=C+B
30 IF C>255:L=L-1:C=C-256
40 W=CODE(INKEY$(#4,30))-32:IF EOF(#4):LINE C,L TO 256,L:GO TO 190
50 IF C+W<=256 AND W>0:LINE C,L TO C+W,L:C=C+W:GO TO 110
60 IF C+W>256 AND C<256:LINE C,L TO 256,L:L=L-1:C=C+W-256:IF C>0:LINE 0,L TO C,
:GO TO 110
70 IF C+W>256 AND C>=255:L=L-1:C=C+W-256:IF C>0:LINE 0,L TO C,L
80 GO TO 110
90 CLOSE #4:CLS#0:INPUT#0;"SAVE This Screen? (y/n) ";S$
00 CLS#0:IF S$(1)="y" OR S$(1)="Y":INPUT#0;"Device_File to SAVE ";S$:CLS#0:SBY
ES S$,131072,32768
10 RUN
20 MODE 4:WINDOW#1,512,256,0,0:PAPER#1,7:INK#1,0:CLS#1
30 WINDOW#1,412,195,53,1:PAPER#1,0:CLS#1
40    IDOW#1,411,194,53,2:PAPER#1,0:INK#1,7:CLS#1:SCALE#1,193,-1,-1
50 WINDOW#0,409,30,53,226:PAPER#0,7:INK#0,0:CLS#0
60 INPUT#0,"Enter device_file name to decode: ";F$:OPEN_IN#4,F$
70 IF INKEY$(#4,30)<>"G":GO TO 270
80 IF INKEY$(#4,30)<>"H":GO TO 280
90 C=0:L=192:GO TO 110
00 DEFine PROCedure rs:DELETE flp1_rle4_bas:SAVE flp1_rle4_bas:END DEFine
```

NEWS FOR QL USERS

We're very pleased to report hat Telecommunications support for the QL has DRAMATICALLY increased since the first version of this GUIDE. At that time, we reported that Compuserve was the ONLY source of QL downloads. Now there are several. Of prime interest is the World's FIRST QL BBS, the QL COM, run by Quantum Computing owner Frank Toemay(See review in Main Boards Section). But there are several boards, not run on QL's which now support QL Users. The TSU BBS , The TIME<X>CHANGE , The P.D.S.E. and PLINK all carry QL downloads now. The TSU and RMG have QL sub-boards. Joe Newmann has been working to write his own BBS on the QL which will then be the VSYS board. We look forward to THAT day!

There has been a problem discovered with the QCODE software. While it works superbly on Compuserve, at 7-1-E, there is trouble logging on to smaller systems which, by and large, use 8-1-N parameters. This problem is particularly vexing to Chris Raynak, since he was particularly interested in supporting the QL on his board, but was told that one couldn't logon to it with a QL! So he set about determining what the problem was. He discovered that if (Using QCODE) you specify: ONLINE 1200 SPACE SER2I (with a 1200 BPS modem) It's the SPACE that's important. Even though it isn't mentioned in the QCODE manual, Chris believes that this is equal to 8-1-N.

Now in using the original QLTERM program, Chris found that the trick to LOGON to the TSU was to specify 60 nulls! (NOTE: very few BBS' will give you that many nulls). Chris says, by using the nulls to get onto the board, you can also use the Upload and Download facilities as well. Chris also says that an AVATEX modem and a 2050 modem won't connect, so an AVATEX can't call a CASBOARD. But other 300 Baud modems apparently DO work using the SPACE option.

Software has also improved for the QL users, the BEST news is that the QLTERM program has now been upgraded to 2400 BPS and includes a lot of the previously lacking features. This latest version is not in the public domain, however, and is available from Rich or QL dealers. The original PD version is still available on COMPUSERVE and from Rich himself (see appendix).

In version 1.0 of this GUIDE, we printed a SuperBASIC RLE decoder for the QL. This turned out to have a BUG in it, and wouldn't run. Since then, Don Thompson wrote a Machine Code RLE decoder which is available on COMPUSERVE as file "RLE.BIN/binary". This has been uploaded with Xmodem using the QLTERM program. RLE.BIN is a short program,but requires a small SuperBASIC program to ust it. Norm Lehfeldt sent this:

```
10 a = RESPR(1024)
20 LBYTES MDV1_RLE_BIN,a : REM Obviously you must use the appropriate
                              device and file name assigned when you
                              Downloaded the file.
30 CALL a
```

RLE.BIN is strictly a DECODER, it cannot ENCODE. No such Encoder exists currently. Norm feels that this may be hard to do on the QL due to it's "quircky pixel shape and SCALE parameters." (anyone care to pick up THAT gauntlet?) This program has no menu such as the Dohaney QRL, but rather a series of prompts.

First, it asks you if you want MODE 4 or MODE 8. This choice is important, because it will determine the character of the resulting screen. If you choose MODE 8, for example, the resulting file can be reloaded into GRAPHIQL or other drawing programs for coloring or modification.

The next prompt asks for the device and filename you want to decode. Then, once the picture appears on your screen, it asks if you want to SAVE it in screen format. The QL screen requires 32 K, so you need to be sure you have enough room on your microdrive to accomodate it if you decide to SAVE it. Once the Machine Code program by Don Thompson was released, it was thought that there would be no use for a SuperBASIC decoder, but that turns out to be false. There are 2 SuperBASIC programs printed here, one for MODE 4 and the other for MODE 8. It seems that the output of these programs fit VERY NICELY into the FRONT PAGE desk-top publishing program. Apparently the M.Code versions won't.

Norm has also done another interesting feat, he has sent files back and forth between the QL and the 2068! He did this by simply hooking up the two modems direct-connect (i.e. no phone or phone system involved) and simply using the Xmodem routines in the Term program of each. He did this because he needed the features of the drawing programs in each computer since neither one had all the facilities he was looking for. But it could just as easily be used to move text files or database entries or even BASIC programs, if you took the original 2068 BASIC program and ran it through Michael Carver's BASIC2text program, you might be able to use some of your FAVORITE programs on both machines.

The number of QL's has also dramatically increased here stateside. When Doug Dewey and the CATS group in Wash.,DC as well as the LIST group in New York all got together to make their mass-purchase of QL's, they increased the number of "known" QL users very dramatically. That move added 75 new QL's to the CATS group alone. And any QL user not currently subscribing to "QUANTUM LEVELS" is making a BIG mistake. It costs $18.95/yr.(6 issues) and is WELL worth it! (P.O. Box 64/Jefferson,N.H.03583.

```
100 GO TO 230:REMark MODE 8 RLE Decoder by Norm Lehfeldt 4/16/87
110 B=2*(CODE(INKEY$(#4,30))-32):IF EOF(#4):GO TO 190
120 C=C+B
130 IF C>512:L=L+1:C=C-512
140 W=2*(CODE(INKEY$(#4,30))-32):IF EOF(#4):BLOCK 512-C,1,C,L,7:GO TO 190
150 IF C+W<=512:BLOCK W,1,C+1,L,7:C=C+W:GO TO 110
160 IF C+W>512:BLOCK 512-C,1,C+1,L,7:L=L+1:C=C+W-512:BLOCK C,1,1,L,7:GO TO 110
170 IF C+W>512 AND C>=512:L=L+1:C=C+W-512:BLOCK C,1,1,L,7
180 GO TO 110
190 CLOSE #4:CLS#0
200 INPUT#0\\"SAVE This Screen? (y/n)"\\S$
210 IF S$="y" OR S$="Y":CLS#0:INPUT#0\\"Device_File Name to Save?"\\S$:CLS#0:SBY
TES S$,131072,32768
220 RUN
230 MODE 8:WINDOW#1,512,192,0,0:PAPER#1,0:INK#1,7,0:CLS#1
240 WINDOW#0,512,63,0,192:PAPER#0,7:INK#0,0:CLS#0
250 INPUT#0\\"Enter device_file name to decode:"\\F$:OPEN_IN#4,F$
260 IF INKEY$(#4,30)<>"G":GO TO 260
270 IF INKEY$(#4,30)<>"H":GO TO 270
280 C=0:L=0:GO TO 110
290 DEFine PROCedure rs:DELETE flp1_rle8_bas:SAVE flp1_rle8_bas:END DEFine
```

Appendix H
Absolute Beginners Start Here

Welcome to a most AMAZING aspect of computing. namely, TELECOMMUNICATIONS. Have you been hearing, on and off, about your friends who have modems, and going on Compuserve, etc? Were you curious, but didn't quite know where to start? You are not alone. A recent survey showed that only 20% of those with computers owned a modem and a large percentage of those were seldom used or only for a specific purpose. So you see, the vast majority of Americans are in the same boat. But mark my words, 5 years from now, THEY'LL ALL KNOW! But you will have had the jump on them by learning NOW!

My first major piece of advice is this: Make friends with someone who "knows the ropes". Preferrably someone with the same equipment you have. This will save you a great deal of time and trouble. Ask them to go "ONLINE" while you look over their shoulder. Ask them to explain things as they go along, not just making choices swiftly as they normally do. After having watched them for awhile, try a logon yourself as they watch. If you have a problem, they can help you out. This is, by FAR, the fastest way to learn.

But failing that ideal (i.e. a one-on-one tutor), ask your User Group president to arrange a LIVE Demo during a meeting. This has been a VERY successful presentation used all over the country. One such presentation elicited this response from an attendee,"I learned more in the last 2 hours than I have in the last 2 years (about telecommunications)". In short, hands-on experience is worth more than 20 manuals! But don't throw the manuals out just yet! You will definately need them, I'm only stressing the importance of help. If you don't belong to a user group, then check with local retailers. Ask if they sell modems and if they do, could they demonstrate one for you. In particular, at Radio Shack, they are set up to do such demos. But Many retailers can help you out. Somehow, someway, you need to get a chance to OBSERVE a real-time LOGON before you understand it. Mind you, it's ALL menu driven, by and large- so it IS possible to just stumble around a figure it out, but that is certainly the SLOWEST way to learn. Now, some questions you may have....Can I damage MY computer or the BBS computer in this process? NO! The system is set up in such a way to isolate the two systems so that only specific commands can be sent, and these cannot do damage. (Of course, if you ignore normal precautions , such as plugging the modem into your computer with the power on, then yes! But you know enough not to do THAT!)

Could I accidentally break into a Commercial Computer system and get arrested by the FBI? Not likely. In order to "break into" a commercial system, you have to PLAN to do that, and there's NO chance of doing so "by accident". Is it expensive? Not necessarily. You can run up bills, on Compuserve or Long Distance, but there's PLENTY to choose from locally (in any town over 500 people). One of the big advantages to "modeming" is that you end up meeting many new friends you would NEVER have met otherwise. Bulletin Boards are open to all age groups, levels of income, and other differences. You may not find exactly what you want the first board you call, but if you look around, you will be amazed at the variety.

Is it difficult? Not at all! A little trial and you will be getting on and off of systems as easy as making a phonecall. People who know NOTHING about computers themselves use Bulletin Boards every day. It can' hurt to read up on the subject, but as I say, the best thing is a human tutor...

Appendix I
Fixing 2050 Modem Boards

HELP ON REPAIRING 2050 MODEM BOARDS

These board are currently available for pennies on the dollar from several T/S retailers. Early reports of failure to get them working have been replaced by many recent reports of success. Here are some tips from those who won:

"The important thing to remember is that these are NOT units which once worked and have developed a fault. Almost anything can be wrong AND several unrelated faults may be present. A weak point is the ribbon cable..." On the small PC Board which connects to the computer, the cable is VERY insecure. This is due to the lack of a case on that end. One can solve this problem several ways. The easiest is to wrap an insulated wire catty corner through the existing holes in the PC Board and tying it securely so the cable can't move. It's also very easy to make a small "Case" out of wood or plastic. The main point is to prevent the cable from ANY motion relative to the Board. All the wires on the cable should be attached IN ORDER. Examine these to be sure they're all connected. These have even broken during shipping.

IMPORTANT NOTE!!! Don't just take the modem out of the box, hook it up to your 2068 and try it! Many of these boards have never been powered up and you may very easily damage your computer! With the price of 2068's in the $140 range, why not test the modem on a T/S 1000? (Dave Schoenwetter's idea). Then you are not taking such a risk.

But even before testing on a 1000, do a THOROUGH and COMPLETE examination of board. First, look for the obvious, missing parts, snipped leads, solder bridges, broken traces and "cold" solder joints. Be patient, look closely, perhaps with a magnifying glass. There SHOULD BE some jumper wires on the non-component side, six to be exact. There should be 5 places where the traces on the PC Board have been intentionally "broken". If you buy the boards from Grey & Clifford, they provide full documentation on this. Before testing you may want to check the ribbon cable at the modem end. It is possible this "press-on" process didn't quite work out, and the ribbon is out-of-line with the pins on the modem board. You won't be able to tell for sure without removing the top piece on the connector.

There have been cases where a computer was damaged due to such misaligned leads and/or a small piece of foil inside this connector, shorting out two leads. Judge the risk for yourself, but don't say you weren't warned!

If you have gone ahead and tested it, with no results, you will really need a schematic. This schematic has been found in a number of User Group newsletters. In it's small form, is also provided free with the purchase of cards from G & C Comp. But if you have trouble reading those, G & C sell "Full size" 17 X 22 set of 2 prints which and Very clear for $5. Once you have the schematic, go through all the components to make sure they are the right value and polarity. On a NUMBER of boards. R-28 and C-22 were snipped and pulled up, but you should have seen that in your first inspection. Also R-13 and R-23 are the wrong values on some boards they should be 2.4 Ohms and 4.7K Ohms respectively. Other components which are frequently bad are the relays and the transformer. If you've gone through all these steps and still no luck, then you will need the help of someone with the proper test equipment and experience. Kurt Casby also wrote an excellent article on the subject in RAMTOP which was later reproduced in the Jan 87 edition of The PLOTTER. Anchor Automation offers no support for this modem, at present, but one free publication which explains the theory of the modem is available from Motorola. That is Application Note AN-891. write to Motorola/3501 Ed Bluestein Blvd./Austin,TX 78721. This covers the chip set used in the 2050.

Appendix J

Glossary

ACK- This is a non-printable charcer primarily used by Xmodem protocol to communicate to the sending computer that a block has been successfully sent. It stands for ACKnowledge.

BAUD- Frequently confused with Bits Per Second, but technically different.Under certain conditions, Baud and B.P.S. are equal, as in the case of 300 Baud. It is operating at 300 BPS. This is a Bell 103 standard. However, using the Bell 212 and 201 modems, they are NOT equal. In 201, the speed of DATA TRANSMISSION is 2400 BPS, but the modulation rate (Baud) is 1200. But you frequently hear these terms misused, even by electronic engineers who should know better.

BPS or Bits Per Second-often confused with Baud, see explanation above.

BREAK-Another non-printable character, actually a tone which is used instead of <enter> to engage a mainframe computer. But on smaller bulletin boards, it CAN cause disconnect. An incoming call on a telephone line with "call-waiting" will have the same effect.

BYE- (several definitions)-This is the program on an RCPM which controls the modem. It detects what speed the calling modem is operating at and asks you how many nulls you need, and if you can display lower case. Then it transfers control to the BBS itself. Second def.:A command used to leave the BBS. 3rd def a command used in IMP to disconnect from the host and escape to CP/M.

CARRIER- A high pitched tone generated by your modem to tell a remote computer that your computer/modem system is online and ready to communicate. There is one pitch for originate and another for answer. These pitches are specified by the standards Bell 103, 201, 202, etc. The european standards (CCITT see below) are, of course, different. Once this carrier stops for any reason, the other system usually detects it's absence and hangs up.

CCITT- Comite' Consultatif International Telephonique et Telegraphique. A commitee which was formed to set up standards to facilitate telecommunications (including voice and telegraph as well as data) between countries. Just as with the Metric system,most countries of the world EXCEPT the US comply with it.

CHAT- on most BBS', this is a command to page the sysop and communicate with him real-time (through the keyboard). There are also systems which allow multiple users online simultaneously to chat with each other. PLINK is a PAY CHAT service.

CHECKSUM- The method of error-checking used by the version of Xmodem found in all terminal programs used by Sinclair computers (except IMP) to date. An older system than the more recent CRC method.

COMMENT- A means of leaving a message directly to the SYSOP which no one elae will be able to see. On some systems, when you first logon and have no validation, this is the only place you'll be able to leave a message. Also called FEEDBACK

DIRECTORY- A listing on the remote computer of the files available for download placed there by the sysop, or by users. On some systems, the directory is automatically updated to include the latest files uploaded by users. Also called "DATABASE" or "CP/M".

DOWNLOAD-Moving a program or ASCII file from a remote computer to YOUR computer

DUPLEX- One of the parameters to be set for telecommunication. Normal operation with a BBS or other dedicated remote system (Compuserve) setting should be FULL DUPLEX. This allows for the remote system to "ECHO" what you send it. But if you call a friend with your computer, and want to CHAT, real-time before exchanging files, then you should set it to HALF DUPLEX which causes your OWN terminal program to "ECHO" what you type to your screen.

E-MAIL- Electronic mail, usually a personal message from one user to another. It cannot be read or killed by anyone except the sender, the receiver and the SYSOP.
EXTENSION- The letters following the "." in a file name. Only 3 letters long.
FEEDBACK- See Comment
FILE TRANSFER- Frequently used instead of Download, but technically different. A Download moves the file into your RAM buffer, whereas a File Transfer goes from the Disk drive on the Host to the disk drive on the receiving computer, with only one block at a time in RAM.
FSK- Frequency Shift Keying is a method used to code the actual information over the phone line at the lower transmission speeds (300 Baud) in which the frequency, but not the phase or amplitude, vary, depending on whether you're sending a 1 or a 0. The other system is PSK or Phase Shift Keying.
FREEWARE- Software which is usually copyrighted and is released to be distributed freely by users and which contains a request that the user donate $5 to the author if the program turns out to be useful.Also called "Fairware"
HOST- The Host computer is the one running the Bulletin Board Program. Normally you (the user) call the host, and it answers by generating an "answer" tone, upon hearing which, you should set your modem to generate the "originate" tone.
KERMIT- a file transfer protocol similar to Xmodem. No Kermit protocol exists for any Sinclair computer currently.
LIBRARY- a file which had an extension ".LBR". Mostly used in CP/M, it may be encountered on some T/S BBS' (such as Timexchange). It is a system of saving disk space, a LBR file contains 2 or more programs, usually including the DOC file to explain how it works. It is possible to "OPEN" a Library file while online, using the "LUX" command (see below).
LF or Linefeed- This is a non-printable character which simply moves the cursor down one line. The ASCII code for it is Control-J. LF is not equivalent to CR or carriage return which technically only moves the cursor to the left-most position on the same line. But in most systems, hitting the <enter> key will generate both a LF and a CR.
LUX- A Utility program to operate on Library files while online. It only serves to "OPEN" engage the "TYPE" command to read a DOC file or the XMODEM SEND to download one individual file from the Library.
MACRO- Is a string of characters which may be send by your terminal program by simply pressing one or two keys. Particularly useful for passwords and other logon data requested by the host, but MACROS can also be used to send a message faster than typing in manually while online.
MODAPTOR- a device used to interface a 300 baud modem to a QL (See Appendix)
NACK- A Non-printable character used by xmodem to inform the sending computer that the last block was unsuccessful and should be sent again. Means Negative Acknowledge.
NUI- Network User Identity, used by Packet switching services as your ID number
NULLS- A null is simply a pause used by the host computer inserted between the Linefeed of the last line it sent to you and the beginning of the next line it sends. The 2068 screen display is fairly slow (1200 baud) relative to other computers. If you are losing the first characters on each line (such as with Modem 753, then ask for more nulls. But if not, ask for 0 nulls.

OVERLAY- A method of allowing a group of changes to be made to an existing program, overlays were developed by CP/M programmers to allow easy modification to a program without divulging the SOURCE CODE. The overlay program is typically a smaller program, which, when "overlaid" on an existing program, changes part of the instructions in the existing program. Overlays are commonly used to configure "generic" software to enable it to run on specific hardware setups.

PACKET RADIO- A system of communication combining Ham Radio and computers. Referred to as "Packet" because the information being transmitted is divided into packets and each packet is error-checked as it goes. There are many nodes in the system, with each node being treated as equal.

PACKET SWITCHING- uses strictly phone lines, Telenet is a Packet switching service. Generally, these are pay services, but cheaper than standard connect through a dedicated phoneline. This system also breaks the data up into packets but may end up sending sequential packets through MANY different channels (depending on which channel is available at a given micro second) and the reassembling them all at the receiving end.

PARAMETERS- Normal data communications can be carried on using different sets of parameters. Parameters include "Word Length","Parity","Number of Stop Bits", and "DUPLEX". The most common system is 8 bit word length, One Stop bit, and No Parity,(or 8-1-None).See each of these as listed in Glossary.

PARITY- or Parity Bit. This is a method of error-checking used at all times during a typical telecommunication. The choices are Odd, Even, or No Parity.

PDSE- Public Domain Software Exchange. A new term that is more generic than the old RCPM.

PROTOCOL- A set of rules by which something (usually an exchange of data) occurs. An example is Xmodem protocol which has a standard method, but for which there are variations.

PSS- Packet Switching Service (See Packet Switching)

PUBLIC DOMAIN- Software which may or may not be copyrighted and which has been released for free distribution.

RCPM- Remote CP/M system, primarily a place for software exchange; the caller is actually using the host computer as if they were sitting at the keyboard of the host. Even though it is usually run on a CP/M system, you can routinely find software for other types of computers.

RELAXED XMODEM- Due to delays between blocks in the use of Xmodem through a PSS. some versions of Xmodem won't work since their timing will cause the transfer to be aborted. Thus, a new version of Xmodem was developed which "relaxed" the timing requirements, solely for the purpose ofusing it through a PSS. (Mainly through PC Pursuit) Ymodem was also used for this.

RLE- Run Length Encoded graphic. This is a system developed on COMPUSERVE so that owners of different computer types could exchange pictures. The RLE file itself is stored as an ASCII file (which any computer, using any protocol can handle. See explanation in body of text.

RS232c- Is a set of standards which apply to a connector/cable used to interface a computer to a peripheral device such as a modem or a printer. Also referred to as Serial communication or Serial I/O.

SIG- Special Interest Group- usually one of several sub-boards on a computer which caters to a particular interest or computer type. The term used on COMPUSERVE.

SIGOP- the main person in charge of maintainance on a SIG.

STOP BIT(s)- one of the parameters set when communicating. Can be 1 or 2 stop bits. Part of RS232 standards. See chart of BBS'
SYSOP- SYStem OPerator, an ancient term used to refer to the person who runs the BBS.
TELEX- a service established by Western Union for International communication. Very slow, 50 baud. You can send a TELEX message from MCI Mail or COMPUSERVE
TNC- Terminal Node Connector-a means of interfacing a computer to a Ham Radio Transciever. Connects to the computer via RS232 I/F and it contains a modem. Used in Packet Radio.
UPLOAD- the opposit of Download, where I (the user) send a file (program or text) to a BBS or my friend's computer.
VIEWDATA- A system of telecommunication used extensively in Britain based on individual screens rather than scrolling text. Requires a special modem and special software. The QCODE software is capable of VIEWDATA reception.
WORD LENGTH- Part of the RS232 standards for Serial communication. Can be 5,6,7 or 8 bit word length. Most commonly 8. (see chart of BBS')
XMODEM- a protocol for sending files which includes error checking and resending of any bad blocks. Established by Ward Christensen in the 1970's.(See explanation in body of text)
YELL- (See Chat)
YMODEM- a protocol which was developed after xmodem and works well over PSS' such as PC Pursuit.

IMP244 (Runs on a 2068 w/AERCO DD using RP/M operating system)

Very little testing was done on this program, as we got it at the very last moment. But IMP244, on record, is a very fine terminal program. It was written by Irv Hoff (the man who designed the first microprocessor), this is his latest creation. It's immediate attraction is it's 1200 BPS capability. The Modem 753 program only works at 300 Baud. But IMP also includes some other advanced features, including CRC Xmodem (as well as Checksum) and the ability to do file transfers in 1K packets (or 128K blocks). Plus MACROS and Batch transfers. Modem 753 had Batch transfers according to the DOCs, but the information I had said not to use it (Bret Lanius). Batch Transfers are only good for calling your friend, not for Bulletin Boards, since a BBS will expect you to input the filename between each transfer. Also convenient is the fact that IMP will adjust to Checksum or CRC Xmodem automatically, in order to match the host. The 1K packets are of no significant advantage at 300 Baud, but at 1200 BPS (especially on L.D.Calls) it speeds up the transfer. IMP also has "Relaxed" Xmodem which allows it to function over PC Pursuit. Modem 753 would not work). We were able to use it to Upload a 149K Library file (ILISP) without a hitch. It took 1.5 hours at 300 Baud. Lucky it was a local call.

The man to thank for this program is Dave Clifford, who successfully modified the OVERLAY used on the Northstar Advantage so that it would work for the 2068 in RP/M mode. He configured it to work with the 2050 modem (although the autodial function dosen't work). This also allows the user to build an RS232 interface out of a 2050 modem card. We tested it using the Z-SI/O Card, and it seems to work well. There are some problems with the Keyboard scan, just as there are with the Modem 753, but several people are looking into this. In the DOCs, it also says the IMP CAN run at 2400 BPS. Of course, the 2068 display only runs at 1200, so you would need a Terminal to use as a display. But it has yet to be proven one way or the other, whether the 2400 will work or not. It HAS been proven that the 1200 works, as it was tested by Ed Grey and Carl Forst using an Avatex 1200 and the Z-SI/O card.

QZX FIDO NET NODE

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That surely is a cryptic title for an article. What it means is that QZX is now hooked up to the nation-wide computer network called FIDO NET. FIDO NET is a collection of more than 1200 bulletin boards spread out all across the nation (and even to foreign countries). This network permits the inexpensive exchange of electronic messages though control stations called nodes. There is probably one near you. FIDO NET

Each node automatically calls up, in the middle of the night, all the nodes for which it has messages. These nodes then hold the messages until the addressee checks in to read them. All the nodes have similar operating procedures. Most charge a modest sum for forwarding messages to pay for the long distance calls involved. Because the messages are sent at night and at a high data rate, these charges are relatively low.

All the FIDO NET nodes can be reached through the network or directly via long distance calls. I will describe exactly how the FIDO NET node works in both these modes. You can practice on the node nearest you with little line costs. Then you can join the nearest FIDO node, and then send messages to QZX and receive your answers back through that node; or call the QZX node directly and read the QZX files in the QZX area. You can also leave files for the magazine there.

First a general description of the node will be given, then message reception and initiation covered, file transfer outlined, and then the sign up procedures will be described.

The QZX FIDO NET node was originally based on a Sanyo IBM compatible computer. That computer is now located in the editor's home and the node is installed in another IBM compatible computer. The QZX node is in network 15 node 6. These two numbers should be noted as they will be part of the address of any message you send to us. The node operates with 8 bit words, no parity, and one stop bit. These parameters permit the accessing station to use 7 bit words with either parity when using ASCII material. The QZX modem permits data rates of 300, 1200, or 2400 baud. Not all nodes support 2400 baud.

The typical FIDO NET board is organized in three sections. The main section, which controls the sign in and auxilliary functions, then feeds one into either the message section or the files section. One can exit from any of these sections by typing G or hanging up the phone. One is directed around the bulletin board by menues. Help screens are available at every choice so the board is easy to use. Because this article is designed to get you started, only a few of the alternatives will be discussed. You can find out about the others by using your local FIDO station or downloading the documentation from the nearest FIDO NET.

MESSAGE SECTION

If you type M at the end of the main menu, you will be transferred to the message section and shown the message menu. When you first sign on to the QZX node, you then will be in the general message area. If you next type A, a list of all the message areas will be shown you. The QZX message area is 11, so type that. You will be shifted to that area and asked if you wish a search to be made for mail for you. I usually answer no here as I like to

look at all the public messages, not just the ones specifically addressed to me. You are then asked for your next command. I use R to read the messages. A read menu then appears. Each time you press <cr>, a carriage return or enter, the next public message will appear on your screen. A simple <cr> after reading it will advance you to the next one. The QZX node will remember the number of the last message you read, so that it will start from that number the next time you sign in; thus you do not have to read old messages. But if you do want to read an old one, all you have to do is type in a number instead of the <cr>.

If you type E, you will be able to Enter a message. The node will prompt you thru each of the required steps. It will ask you for the addressee, the subject, and the type. The type can be either public, so any user can read it, or private, which can be seen only by the addressee or you (or the sysop). A carriage return (<cr> or enter) by itself will end the message. You can then send the message by following help instructions or type S to Save it.

If you type R, you can easily Reply to the last message read. Just follow the prompts.

Send Q to Quit reading messages. If you type G (Goodby), you will leave the node. If you type M, you will be returned to the Main menu. In either case, the node will remember the message area you were last in and automatically return you to that area when you next request the message section.

FILES

From the main section, you can request the File section by typing F. A procedure similar to the procedure for the message section will take you to the file section reserved for QZX. This section is number 11. There you will find all the QZX files.

To see a List of all the files available type L. To see what a specific file contains, type T. The list will have given you the length of the file, so you can estimate how long it will take you to have it Typed to your screen. (A little over 2K bytes per minute at 300 baud.)

Files can be Uploaded or Downloaded using a number of different protocols. If your communication program supports one of the popular protocols, such as Xmodem, you will most likely find that FIDO NET supports it too. If you do not find our node compatible with your software, you can always use the plain ASCII mode. Of course, that mode has no error checking at all and is highly unsuitable for machine language or any non-ASCII files (like many BASIC programs).

I place many of the articles for the forthcoming issues of QZX in this file area. Bo then picks them off the board and prepares them for the printer. Thus you can get part of the next issues of QZX from this area. All articles do not appear here, only the ones which I have to enter into the computer. We also try to put short notes of interest to T/S hams here when we run across interesting items. No program listings are in this section now.

Again typing G will cause you to leave the node. Typing M will return you to the main menu Here too the computer will remember which file area you last left and return you to it automatically the next time you request the file section.

INITIAL SIGN ON

Here the initial sign on procedure is detailed so you can get on the QZX node directly. First call (505) 522-7081. Normally the QZX FIDO NET node is listening here 24 hours a day, seven days a week. The node is quite active, but you usually will not get a busy signal. The QZX modem will send out carriers of different frequencies until it finds the one which your modem likes; thus automatically setting the appropriate data rate. When the connection is established, the cursor appears on your screen. You should then type two spaces or <cr>'s (enter). The QZX node then askes "Your FIRST name:" when you reply (send enter when finished) it replies "Your LAST name:" which you should then type in. The computer then checks for errors by asking "XXX XXX, right? (y,n)" where XXX represents the names you have typed in. If a mistake has ben made, your names are requested again. When they are received correctly, the node produces a screen of welcome and explaination and then askes for your city and state. It checks for correct reception of this information and then askes you to "Pick a password". After you do, it says "XXX right? (y,n)" where XXX is your password. Remember this password because the computer will ask for it each time you sign on. The preliminaries are now complete, so the computer sends the usual initial screen and gives you the main menu. The first time you sign on, you should type A to Answer self-prompting questionaire for statistical purposes.

The first time you sign on to the node directly, you are allowed five minutes. This is about enough time to enter your name and password and to fill out the questionaire. Give Bo about 24 hours to record your sign on and to validate your password. When you next sign on, the computer will just ask for your names and password and then pass you directly to the main menu. You will now be allowed up to 45 minutes for one call with a total of 120 minutes per day. That should be enough time to keep the long distance telephone companies happy.

FIDOGRAMS

To send messages to QZX via the FIDO NET system you need to establish an account at your nearest FIDO NET node using the procedures adopted by that node. You then go to a special FIDO NET message section (usually number five) and send the message following the prompts given there. Remember that the QZX node is net 15 mode 6 (15/6). Send the message to ALEX BURR or QZX. We will get it here and send a reply, if necessary, to you which will appear in the FIDO NET message section of your node. If you do not know the telephone number of your nearest node, you can Type the appropriate file from any node including the QZX node. Because the list is lonnnng this can become expensive. Send us a self-addressed postcard and we will look up a nearby node for you.

THINGS TO REMEMBER

QZX FIDO NET telephone number: (505) 522-7081. Signoff by sending G or hanging up the phone. Send a couple of initial spaces. Get help screens by typing ? Type ^S (control S) to pause FIDO to read a screen Type ^Q (control Q) to resume receiving. Have fun and I hope this new service is useful to you.

MAKING THE MOST OF LOCAL BOARDS

By far the biggest use that TIMEXers have had for their modems has been exploring their local BBS scene (it's free!). It seemed an error not to mention these resouces. They offer a WIDE RANGE of telecommunications fare, and the choices will only IMPROVE with time.

First let's look at the worst case. Some Timex owners logon to a board and find young people hurling verbal abuse on each other or simply posting useless trivia. They get disgusted with this and either put their modems back in the closet, or stick to COMPUSERVE. This is an unspeakable tragedy, one I trust YOU won't commit! Well, what IS there to see, on local boards? PLENTY!

First and foremost, there's conversation. GIGABYTES of it. A protion appears to be people posting just for the sake of posting. It takes VERY LITTLE to put up a BBS, so many young people have done it. Only to wonder later exactly why??? But this dilutes the better boards with a lot of lesser significance. So, with all these added boards, finding the ideal conversation board just might possibly take longer than one day.

Where I live, Phoenix, there are 2 million people in the metro area. There may be 200-300 Bulletin Boards (I've never seen a master list that seemed even CLOSE to complete). A new user in this pool may look for 2 weeks without finding exactly what they're looking for. (Of course, if they're a new user, they may not KNOW exactly what they're looking for and WON'T until they stumble across it by accident!)

I find, the direct approach is best: "HELLO, I'M NEW ON THIS BBS, CAN ANYONE TELL ME ABOUT A BBS WHERE THEY PLAY CHESS? or discuss music, or have movie reviews, Etc."

You may get some bum steers, but those area easily eliminated. Sooner or later you'll find it.

Another point, every time you logon to a new system, check it out CAREFULLY. You never know what you'll find. I once carried on a VERY INTERESTING discussion on Artificial Intelligence with an Engineer on a board called "BEER BBS" (operating on a generally rowdy Tandy 1000!) amid a sea of absolute BLATHER. So, just because you've checked one sub-board, don't EVEN assume the whole board is the same.

If, as it happens, you're a particularly polite person, it may happen that in the course of a random search of systems in your city, you may get your sensibilities offended. Try not to let it ruin your attitude-many people do. It truely is their loss. Keep looking.

In your search for conversation, you may wish to look at the lists found on many boards, called,"O)ther BBS systems in Town". But be aware that the upkeep on these lists is a time-consuming thing which many sysops don't keep up with, you may find numbers on there that went dead 6 months before. So when calling a new number, dial manually so you can answer voice without sending a modem tone into someone's ear. Please don't hang up if a human answers, it's very rude.

But suppose you've searched long and hard, and STILL can't find your elusive "ISLAND". Well, there are several possible strategies here. You can always start your own sub-board. In this strategy, your most important ally is a sympathetic sysop. For all you know, ANY sysop could be dying to start a serious conversation sub-board, but just need YOO to step forward and ask for one. Suppose you find one, and the sysop agrees to let you have a sub-board, what then? I will give you my opinion, but there are several thousand possible approaches. (I'm assuming an "other-than-Sinclair-sub-board" here). I claim you

need a topic. I don't think you can call a sub-board "serious conversation" and expect it to get anywhere. Selection of the topic will make a GREAT difference is whether this will be a satisfying experience or a frustrating one. Preferrably, pick a topic that you, yourself, are interested in.

What KIND of topic? The range is as wide as the Universe itself. But remember that it takes more than a few users to make a sub-board interesting. So you can't stray too far from the mainstream. How far is too far? I haven't the slightest idea. The easiest way to find out is to try it and see if it flies! Here is a very short list of some possible topics:

CURRENT EVENTS	MUSIC	LOCAL ENTERTAINMENT
PASCAL	POETRY	PROGRAMMING IN GENERAL
HAM RADIO	HARDWARE	SPORTS
TRIVIA	LOCAL RESTAURANTS	CHESS
SCIENCE FICTION	PROBLEM SOLVING	LITERATURE

...or come up with your own, these are only EXAMPLES.

But suppose you can't get a sub-board, (or don't want that much responsibility) then what? Find a board with the least "Nonsense" and simply respond to people's posts in a positive, friendy and straight forward manner. You will be absolutely AMAZED at how effective this is! In some cases, I've walked into a "conversation" where there appeared to be nothing important at all, and made ONE good post. The next thing I knew, a whole conversation had started due to the one "seed" post. This dosen't ALWAYS work, but it CAN work, and it certainly dosen't cost anything to TRY it.

The biggest point is this: "DON'T GIVE UP TOO QUICKLY!" What you're looking for is probably out there, you may simply have to SEARCH for it. Patience and persistence are the keys...

What is there besides conversation? Text files, for one thing. Even if the nearest board carrying T/S software is a thousand miles away, you can take interesting text files off your local Commodore board. This can be done even without Xmodem, simply open the buffer. Or maybe software too! But you say there's no support for you computer in town? Not true! Many boards carry BASIC programs which can EASILY be converted. It will take a bit of time, and you may have to think a bit, but it can be very rewarding. And with Michael Carver's new BASIC2text program, you can convert in the other direction, too. There are also online games where one or more players can be online simultaneously. These are sometimes known as RPG's or Role Playing Games. The original RPG was called "Dungeons and Dragons" but there have been thousands of others spawned as a consequence.

There are also a new phenomena of multi-user chat systems going up around the country. In the beginning, these were pay systems, but more and more free ones are being seen. This allows you to "CHAT" real-time with as many as 16 other users at the same time. It depends on your approach, I find that more than 6 or 7 starts to get a bit difficult to follow, but I've had others tell me they love it when ALL the lines are full. This is also impossible to describe without a DEMO.

Programmers and sysops are dreaming up new and different features for online systems every day. I've only scratched the surface of the possibilities out there to be explored. And if you REALLY CAN'T FIND anything that you like, then start a system of your own! That's simple enough.